

Indian Institute of Technology, Madras - Centre for Continuing Education

Notations :

- 1.Options shown in **green** color and with icon are correct.
- 2.Options shown in **red** color and with icon are incorrect.

Question Paper Name :

IIT M FOUNDATION DIPLOMA ENDTERM
QPD1 07 Aug 2022 IBA

Subject Name :

2022 Aug: IIT M FOUNDATION DIPLOMA
ENDTERM QPD1

Creation Date :

2022-08-03 15:47:16

Duration :

90

Total Marks :

1121

Display Marks:

Yes

Share Answer Key With Delivery Engine :

Yes

Actual Answer Key :

Yes

Calculator :

Scientific

Magnifying Glass Required? :

No

Ruler Required? :

No

Eraser Required? :

No

Scratch Pad Required? :

No

Rough Sketch/Notepad Required? :

No

Protractor Required? :

No

Show Watermark on Console? :

Yes

Highlighter :

No

Auto Save on Console?

Yes

Change Font Color :

No

| | |
|----------------------------------|----|
| Change Background Color : | No |
| Change Theme : | No |
| Help Button : | No |
| Show Reports : | No |
| Show Progress Bar : | No |

Group I

| | |
|--|------------|
| Group Number : | 1 |
| Group Id : | 6406538821 |
| Group Maximum Duration : | 0 |
| Group Minimum Duration : | 90 |
| Show Attended Group? : | No |
| Edit Attended Group? : | No |
| Break time : | 0 |
| Group Marks : | 1121 |
| Is this Group for Examiner? : | No |
| Examiner permission : | Cant View |
| Show Progress Bar? : | No |
| Revisit allowed for group Instructions? : | Yes |
| Maximum Instruction Time : | 0 |
| Minimum Instruction Time : | 0 |
| Group Time In : | Minutes |
| Navigate To Group Summary From Last Question? : | No |
| Disable Submit Button During Assessment? : | No |

Sem1 Eng1

| | |
|---------------------|-------------|
| Section Id : | 64065322245 |
|---------------------|-------------|

| | |
|---|-------------|
| Section Number : | 1 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 27 |
| Number of Questions to be attempted : | 27 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351122 |
| Question Shuffling Allowed : | No |

Question Number : 1 Question Id : 640653353993 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 1: ENGLISH 1"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174097. ✓ Yes

6406531174098. ✗ No

| | |
|-------------------------------------|-------------|
| Sub-Section Number : | 2 |
| Sub-Section Id : | 64065351123 |
| Question Shuffling Allowed : | No |

**Question Id : 640653353994 Question Type : COMPREHENSION Sub Question Shuffling
Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A
Think Time : N.A Minimum Instruction Time : 0**

Question Numbers : (2 to 11)

Question Label : Comprehension

Read the following passage and answer the given subquestions that follow:

It was in the times of Wajid Ali Shah. Lucknow was drowned in sensuality. The big and small, the rich and the poor – all were sunk in it. Some were engrossed in dance and music; some just revelled in the drowsiness induced by opium. Love of pleasure dominated every aspect of life. In administration, in literature, in social life, in arts and crafts, in business and industry, in cuisine and custom – sensuality ruled everywhere. The state officials were absorbed in fun and pleasure, poets in descriptions of love and separation, artisans in *zari* and *chikan* work, businessmen in dealings in surma, perfumes and cosmetics. All were drowned in sensual pleasures. No one knew what was happening around the world. Quail fights were on. Rings were being readied for partridge fights. Somewhere the game of *chausar* was being played, with its attendant shouts on the winning throw. Elsewhere a pitched chessboard battle was on. From the king to the pauper – all were engrossed in these pleasures. So much so, that if beggars received money in alms, they preferred to spend it on opium or its extract rather than bread. ‘Playing games like chess or cards or ganjifa sharpens the mind, improves mental faculties and helps in solving complex problems.’ Such arguments were being forcefully advanced. (People subscribing to this thesis can be found even today.) So if Mirza Sajjad Ali and Mir Roshan Ali spent most of their time sharpening their wits, how could any thoughtful person take exception. Both of them were hereditary Jagirdars, free from the worries of a livelihood; they enjoyed their good food without having to work at all. What else could they do? ~

Chess Players - Premchand

Sub questions

**Question Number : 2 Question Id : 640653353995 Question Type : MCQ Is Question
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction
Time : 0**

Correct Marks : 2

Question Label : Multiple Choice Question

What can be identified during the reign of Wajid Ali Shah?

Options :

6406531174099. ✓ Lucknow was in decadence.

6406531174100. ✗ Lucknow was in mismanagement.

6406531174101. ✗ Lucknow was facing the threat of invasion.

6406531174102. ✗ People were dissatisfied under the rule of Wajid Ali Shah.

Question Number : 3 Question Id : 640653353996 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

An appropriate substitute for the word *sensuality* would be _____.

Options :

6406531174103. ✓ Erotic

6406531174104. ✗ Sensible

6406531174105. ✗ Sentimental

6406531174106. ✗ Celebratory

Question Number : 4 Question Id : 640653353997 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The bird referred here is _____.

Options :

6406531174107. ✗ Quail

6406531174108. ✗ Partridge

6406531174109. ✗ Peacock

6406531174110. ✓ Both Quail and Partridge

Question Number : 5 Question Id : 640653353998 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

'People subscribing to this thesis can be found even today.' What is the thesis referred to here?

Options :

6406531174111. ❌ Bird fights are good.

6406531174112. ✓ Playing chess or cards sharpens one's mind.

6406531174113. ❌ Leisure enhances one's creativity.

6406531174114. ❌ None of these.

Question Number : 6 Question Id : 640653353999 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose an appropriate substitute for the word *revel*.

Options :

6406531174115. ✓ Celebrate

6406531174116. ❌ Criticise

6406531174117. ❌ Oppose

6406531174118. ❌ Play

Question Number : 7 Question Id : 640653354000 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

'Love of music dominated every aspect of Lucknow's life.' This statement is _____ as per the

text.

Options :

6406531174119. ✘ TRUE

6406531174120. ✓ FALSE

Question Number : 8 Question Id : 640653354001 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Beggars in Lucknow spent their money on opium rather than on food. This statement is _____ as per the text.

Options :

6406531174121. ✓ TRUE

6406531174122. ✘ FALSE

Question Number : 9 Question Id : 640653354002 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What were Mirza Sajjad Ali and Mir Roshan Ali doing in Lucknow?

Options :

6406531174123. ✘ They were warriors.

6406531174124. ✘ They were businessmen.

6406531174125. ✓ They were playing chess.

Question Number : 10 Question Id : 640653354003 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose an appropriate substitute for the word *engross*.

Options :

6406531174126. ✓ Engage

6406531174127. ✗ Compile

6406531174128. ✗ Both Engage and Compile

6406531174129. ✗ None of these

Question Number : 11 Question Id : 640653354004 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The poets in Lucknow were _____.

Options :

6406531174130. ✗ Writing pleasure songs

6406531174131. ✓ Writing poems of love and separation

6406531174132. ✗ Writing about the King

6406531174133. ✗ Writing about the God

Question Id : 640653354005 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (12 to 21)

Question Label : Comprehension

Listen to the audio sample and answer the given subquestions.



885_640653_0_1984128_hs1001fdane1s1q11mq.mp3

Sub questions

Question Number : 12 Question Id : 640653354006 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statements is TRUE?

Options :

6406531174134. ✓ Neptune has 14 moons.

6406531174135. ✓ At least one of Neptune's moons requires 29 years to travel around it once.

6406531174136. ✗ Triton is Neptune's 7th largest moon.

6406531174137. ✗ Neptune only has one moon – Triton – the others are asteroids.

Question Number : 13 Question Id : 640653354007 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Triton is the biggest moon among all of Neptune's moons. True or false?

Options :

6406531174138. ✓ TRUE

6406531174139. ✗ FALSE

Question Number : 14 Question Id : 640653354008 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"Also, Triton is one of only four objects in the solar system that we know _____ geologically active." Fill the blank, and justify your answer

Options :

6406531174140. ✓ Is, because the subject of the sentence is the singular "Triton"

6406531174141. ❖ Are, because the subject of the sentences is “four objects” – which is in the plural

6406531174142. ❖ Is, because we do not know if the other three objects are geologically active yet

6406531174143. ❖ Are, because we know there are four objects that are geologically active

Question Number : 15 Question Id : 640653354009 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The surface area of Triton is bigger than that of _____.

Options :

6406531174144. ❖ Australia

6406531174145. ❖ Russia

6406531174146. ✓ Australia and Russia together

6406531174147. ❖ Russia and North America

Question Number : 16 Question Id : 640653354010 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

How does Triton orbit Neptune?

Options :

6406531174148. ❖ In the same direction of Neptune's rotation

6406531174149. ✓ Against the direction of Neptune's rotation

6406531174150. ❖ In the double system, outside Neptune's orbit

6406531174151. ❖ Against the rotation of the other moons of Neptune

Question Number : 17 Question Id : 640653354011 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following words is not similar to the word "catapult"?

Options :

6406531174152. ✘ Sling

6406531174153. ✘ Shoot

6406531174154. ✘ Propel

6406531174155. ✓ Screech

Question Number : 18 Question Id : 640653354012 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following words can be synonyms of the word "ground"?

Options :

6406531174156. ✓ Crushed

6406531174157. ✘ Practical

6406531174158. ✘ None of these

Question Number : 19 Question Id : 640653354013 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following is true about Triton's history before Neptune?

Options :

6406531174159. ✓ That it may have been a dwarf planet

6406531174160. ✘ That it was an asteroid

6406531174161. ✓ That it was previously part of a double system

6406531174162. ✗ That it was part of another galaxy

Question Number : 20 Question Id : 640653354014 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which among the following, according to experts, could be the future possibilities for Triton?

Options :

6406531174163. ✓ Triton may eventually crash into Neptune.

6406531174164. ✓ Triton may be ground by Neptune's gravity into a huge ring system.

6406531174165. ✗ Triton will escape the orbits of Neptune, and go into space.

6406531174166. ✗ Triton will move back into the double system, and leave Neptune's orbit.

Question Number : 21 Question Id : 640653354015 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following sentences is grammatically correct?

Options :

6406531174167. ✓ Triton was probably a dwarf planet that was forced into submission by Neptune, when the solar system was younger and more chaotic.

6406531174168. ✗ Triton was probably a dwarf planet forced into submission by Neptune, when the solar system was much younger and much chaotic.

6406531174169. ✗ Triton was probably a dwarf planet forced into submission by Neptune, when the solar system was much young and more chaotic.

Sub-Section Number : 3

Sub-Section Id : 64065351124

Question Shuffling Allowed : No

Question Id : 640653354016 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (22 to 26)

Question Label : Comprehension

Listen to the audio and answer the given subquestions



885_640653_0_1984128_hs1001fdane1s1q21mq.mp3

Sub questions

Question Number : 22 Question Id : 640653354017 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

How many syllables are there in the word **destiny**?

Options :

6406531174170. ✘ 2

6406531174171. ✓ 3

6406531174172. ✘ 4

6406531174173. ✘ 5

Question Number : 23 Question Id : 640653354018 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

How many syllables are there in the word **successful**?

Options :

6406531174174. ✘ 2

6406531174175. ✓ 3

6406531174176. ✘ 4

6406531174177. ✘ 5

Question Number : 24 Question Id : 640653354019 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

How many syllables are there in the word **environment**?

Options :

6406531174178. ✘ 2

6406531174179. ✘ 3

6406531174180. ✓ 4

6406531174181. ✘ 5

Question Number : 25 Question Id : 640653354020 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate pause for the following sentence as you hear in the audio.

If you think you cannot make a difference I would say you very well can make a difference, if you so desire

Options :

6406531174182. ✓ If you think you cannot make a difference/ I would say you very well can make a difference/ if you so desire//

6406531174183. ✘ If you/ think you cannot make a difference I would/ say you very well/ can make a difference if you so desire//

6406531174184. ✶ If you think you cannot make a difference/ I would/ say you very well can make a difference if you so desire//

Question Number : 26 Question Id : 640653354021 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate pause for the following sentence as you hear in the audio.

It's your job to remove those myths and to get things done

Options :

6406531174185. ✶ It's your job to remove/ those myths and to get things done//

6406531174186. ✶ It's/ your job to remove/ those myths and to get/ things done//

6406531174187. ✓ It's/ your job/ to remove those myths/ and to get things done//

Question Id : 640653354022 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (27 to 31)

Question Label : Comprehension

Read the following telephone conversation and answer the given subquestions:

A: Hello! Brizbee Customer Services. (i) _____

B: Thank you! I want to speak in connection with the replacement of an item that I had ordered a few days ago. The order number is IM349520.

A: I'm afraid I can't hear you (ii) _____

B: Order number IM349520.

A: It is still not audible. (iii) _____

B: Alright. I'm (iv) _____ for now. I will call you back later.

Sub questions

Question Number : 27 Question Id : 640653354023 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which among the following is an appropriate response for the blank (i)?

Options :

6406531174188. ❌ What's up?

6406531174189. ❌ Who are you?

6406531174190. ✓ How may I help you?

Question Number : 28 Question Id : 640653354024 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which among the following is an appropriate response for the blank (ii)?

Options :

6406531174191. ❌ See you soon.

6406531174192. ✓ Hello! Your voice is breaking.

6406531174193. ❌ Goodbye! I will talk to you later.

Question Number : 29 Question Id : 640653354025 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which among the following is an appropriate response for the blank (iii)?

Options :

6406531174194. ✓ Hello! Are you there?

6406531174195. ❌ What can I do for you today?

6406531174196. ✎ It was a great conversation. Let us connect regularly.

Question Number : 30 Question Id : 640653354026 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which among the following is an appropriate response for the blank (iv)?

Options :

6406531174197. ✎ Hanging in

6406531174198. ✎ Hanging on

6406531174199. ✓ Hanging up

Question Number : 31 Question Id : 640653354027 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which expression in telephonic conversation means to end a phone conversation by cutting the connection?

Options :

6406531174200. ✎ Hang in

6406531174201. ✓ Hang up

6406531174202. ✎ Hang on

Sub-Section Number : 4

Sub-Section Id : 64065351125

Question Shuffling Allowed : No

Question Id : 640653354028 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (32 to 36)

Question Label : Comprehension

Match Column A with suitable options in Column B. (Hint: Word collocation)

| Column A | Column B |
|-------------|---------------|
| 1. Added | i.Fight |
| 2. Sound | ii.Area |
| 3. Tacit | iii.Advice |
| 4. Endless | iv. Agreement |
| 5. Built-up | v.Advantage |

Sub questions**Question Number : 32 Question Id : 640653354029 Question Type : MCQ Is Question****Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction****Time : 0****Correct Marks : 2**

Question Label : Multiple Choice Question

Added

Options :

6406531174203. ✘ i

6406531174204. ✘ ii

6406531174205. ✘ iii

6406531174206. ✘ iv

6406531174207. ✓ v

Question Number : 33 Question Id : 640653354030 Question Type : MCQ Is Question**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction****Time : 0****Correct Marks : 2**

Question Label : Multiple Choice Question

Sound

Options :

6406531174208. ✘ i

6406531174209. ✘ ii

6406531174210. ✓ iii

6406531174211. ✘ iv

6406531174212. ✘ v

Question Number : 34 Question Id : 640653354031 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Tacit

Options :

6406531174213. ✘ i

6406531174214. ✘ ii

6406531174215. ✘ iii

6406531174216. ✓ iv

6406531174217. ✘ v

Question Number : 35 Question Id : 640653354032 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Endless

Options :

6406531174218. ✓ i

6406531174219. ✘ ii

6406531174220. ✘ iii

6406531174221. ✘ iv

6406531174222. ✘ v

Question Number : 36 Question Id : 640653354033 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Built-up

Options :

6406531174223. ✘ i

6406531174224. ✓ ii

6406531174225. ✘ iii

6406531174226. ✘ iv

6406531174227. ✘ v

Question Id : 640653354054 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (37 to 41)

Question Label : Comprehension

Fill in the blanks with the right options.

1) ___, the house had appeared enormous. 2) ___, beside the new grey buildings towering above it like unfriendly giants, it seemed a miserable shack. The old Naga tree 3) _____ its dry branches towards eternity, covering the roof with sickly yellow leaves. A funereal crow 4) _____ croaking on a wire. It flew away as I approached. 5) _____ shadows stared.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 37 Question Id : 640653354055 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate option for blank (1).

Options :

6406531174294. ✘ Now

6406531174295. ✓ Once

6406531174296. ✘ Stretched

6406531174297. ✘ Perched

6406531174298. ✘ Furtive

Question Number : 38 Question Id : 640653354056 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate option for blank (2).

Options :

6406531174299. ✓ Now

6406531174300. ✘ Once

6406531174301. ✘ Stretched

6406531174302. ✘ Perched

6406531174303. ✘ Furtive

Question Number : 39 Question Id : 640653354057 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate option for blank (3).

Options :

6406531174304. ✘ Now

6406531174305. ✘ Once

6406531174306. ✓ Stretched

6406531174307. ✘ Perched

6406531174308. ✘ Furtive

Question Number : 40 Question Id : 640653354058 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate option for blank (4).

Options :

6406531174309. ✘ Now

6406531174310. ✘ Once

6406531174311. ✘ Stretched

6406531174312. ✓ Perched

6406531174313. ✘ Furtive

Question Number : 41 Question Id : 640653354059 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate option for blank (5).

Options :

6406531174314. ✘ Now

6406531174315. ✘ Once

6406531174316. ✘ Stretched

6406531174317. ❌ Perched

6406531174318. ✓ Furtive

Sub-Section Number : 5

Sub-Section Id : 64065351126

Question Shuffling Allowed : Yes

Question Number : 42 Question Id : 640653354034 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The word 'erode' is _____.

Options :

6406531174228. ❌ Trisyllabic

6406531174229. ❌ Polysyllabic

6406531174230. ✓ Disyllabic

Question Number : 43 Question Id : 640653354035 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The word 'revenue' has ___ syllables.

Options :

6406531174231. ❌ 1

6406531174232. ❌ 2

6406531174233. ✓ 3

Question Number : 44 Question Id : 640653354036 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

'The company projects the estimate spending at 75,000\$ for this year.'

Choose the appropriate stress for the usage of the word 'project' in the sentence.

Options :

6406531174234. ❌ PROject

6406531174235. ✓ proJECT

Question Number : 45 Question Id : 640653354037 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following has an aspirated stop?

Options :

6406531174236. ❌ Stem

6406531174237. ❌ Test

6406531174238. ❌ Imply

6406531174239. ✓ Both Test and imply

Question Number : 46 Question Id : 640653354038 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Birds _____ in the sky.

Options :

6406531174240. ✘ Flies

6406531174241. ✓ Fly

Question Number : 47 Question Id : 640653354039 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Payasam is one of the most favourite delicacy of Tamil Nadu. Spot the error in this sentence.

Options :

6406531174242. ✘ Is

6406531174243. ✓ Delicacy

Question Number : 48 Question Id : 640653354040 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Apple _____ a new set of gadgets.

Options :

6406531174244. ✓ Has launched

6406531174245. ✘ Have launched

Question Number : 49 Question Id : 640653354041 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Context: Teacher to students in the classroom.

"You should attend the three-hour lecture tomorrow".

Options :

6406531174246. ✓ Command

6406531174247. ✗ Request

Question Number : 50 Question Id : 640653354042 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"I can't believe Raksha told the management about Rashi's plans of eventually quitting the company – I didn't think she was someone who would _____."

Options :

6406531174248. ✗ Sneak on someone

6406531174249. ✓ Sell someone out

6406531174250. ✗ Cheat on someone

6406531174251. ✗ Hurl abuses on someone

Question Number : 51 Question Id : 640653354044 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Consider the following sentences:

(1) I sleep.

(2) I work out every day.

(3) I love mangoes.

Which of the above sentences has an explicit object?

Options :

6406531174256. ✘ All three

6406531174257. ✘ (1) only

6406531174258. ✘ (1) and (2)

6406531174259. ✓ (3) only

Question Number : 52 Question Id : 640653354045 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

In the sentence '*Shyam goes to college*', the tense and agreement is in the word _____.

Options :

6406531174260. ✘ College

6406531174261. ✘ Shyam

6406531174262. ✓ Goes

6406531174263. ✘ To college

Question Number : 53 Question Id : 640653354046 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

'*They cook dinner together*' is a grammatically correct sentence where there is subject-verb agreement.

Options :

6406531174264. ✓ TRUE

6406531174265. ✘ FALSE

Question Number : 54 Question Id : 640653354047 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

In the words '*mountaineer*', '*disassemble*', and '*souvenir*', the stressed syllable is the ____.

Options :

6406531174266. ✘ First

6406531174267. ✘ Second

6406531174268. ✓ Third

6406531174269. ✘ In different places in each word

Question Number : 55 Question Id : 640653354048 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The word '*affiliate*' is stressed on _____. .

Options :

6406531174270. ✘ 'Liate'

6406531174271. ✘ 'Af'

6406531174272. ✘ 'Fil'

6406531174273. ✓ 'Fi'

Question Number : 56 Question Id : 640653354049 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identity the stressed syllable in the following word:

Procedure

Options :

6406531174274. ✘ First syllable

6406531174275. ✓ Second syllable

6406531174276. ✘ Third syllable

6406531174277. ✘ No stress

Question Number : 57 Question Id : 640653354050 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Choose from the options the word with correctly marked stress:

Biological

Options :

6406531174278. ✘ B'i'ological

6406531174279. ✘ 'Biological

6406531174280. ✘ Biologi'cal

6406531174281. ✓ Bio'logical

Question Number : 58 Question Id : 640653354051 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Jane is _____ than Anne.

Options :

6406531174282. ✘ Tall

6406531174283. ✓ Taller

6406531174284. ✘ More taller

6406531174285. ✘ the tallest

Question Number : 59 Question Id : 640653354052 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The reporters asked insightful questions during the interview. The word insightful qualifies _____.

Options :

6406531174286. ✘ Interview

6406531174287. ✘ Reporters

6406531174288. ✓ Questions

6406531174289. ✘ None of these

Question Number : 60 Question Id : 640653354053 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the subject in the following sentence.

"The bicycle had been left in the rain."

Options :

6406531174290. ✓ The bicycle

6406531174291. ✘ Rain

6406531174292. ✘ Left in the rain

6406531174293. ✘ Had been left in the rain

Sub-Section Number : 6

Sub-Section Id : 64065351127

Question Shuffling Allowed : Yes

Question Number : 61 Question Id : 640653354043 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

What does "apple of one's eye" mean?

Options :

6406531174252. ✓ A cherished and favoured person

6406531174253. ✓ A thing or person which someone loves above all others

6406531174254. ✖ A memory of something that makes one nostalgic

6406531174255. ✖ A feeling of helplessness

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| | |
|---|-------------|
| Section Id : | 64065322246 |
| Section Number : | 2 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 13 |
| Number of Questions to be attempted : | 13 |
| Section Marks : | 40 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351128 |
| Question Shuffling Allowed : | No |

Question Number : 62 Question Id : 640653354060 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 1/DIRECT ENTRY DIPLOMA : STATISTICS FOR DATA SCIENCE 1"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174319. ✓ Yes

6406531174320. ✗ No

Sub-Section Number : 2

Sub-Section Id : 64065351129

Question Shuffling Allowed : Yes

Question Number : 63 Question Id : 640653354061 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

An urn contains 10 white balls and 3 black balls. Four balls are drawn from the urn without replacement. Let a random variable X be defined as the number of white balls drawn, what are the possible values X can take?

Options :

6406531174321. ✓ 1, 2, 3, 4

6406531174322. ✗ 1, 2, ..., 10

6406531174323. ✗ 0, 1, 2, 3, 4

6406531174324. ✗ 0, 1, 2, ..., 10

Question Number : 64 Question Id : 640653354077 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A fair coin is tossed three times. If X denote the number of heads followed immediately by a tail, then what is the expected value of X ?

Options :

6406531174352. ✘ $\frac{7}{8}$

6406531174353. ✘ $\frac{3}{8}$

6406531174354. ✘ $\frac{4}{8}$

6406531174355. ✓ $\frac{5}{8}$

Sub-Section Number : 3

Sub-Section Id : 64065351130

Question Shuffling Allowed : Yes

Question Number : 65 Question Id : 640653354066 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

A student of B.Sc. Online Degree ran out of time while taking a quiz-exam and plans to guess on last 5 questions. Each question has 4 possible choices, one of which is correct. If the random variable X represents the number of questions answered correctly, among the last 5 questions, then find the $\text{Var}(X)$. (Enter the answer correct to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.91 to 0.97

Sub-Section Number : 4

Sub-Section Id : 64065351131

Question Shuffling Allowed : Yes

Question Number : 66 **Question Id :** 640653354067 **Question Type :** MSQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following options is/are incorrect for a variable having ratio scale of measurement?

Options :

6406531174332. ✓ Difference between the values of a variable can not be evaluated.

6406531174333. ✗ Order of the data is meaningful.

6406531174334. ✗ Multiplication and division of values of a variable is possible.

6406531174335. ✓ There is no absolute zero for a variable.

Sub-Section Number : 5

Sub-Section Id : 64065351132

Question Shuffling Allowed : Yes

Question Number : 67 **Question Id :** 640653354068 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3

Question Label : Multiple Choice Question

If a random variable X is exponentially distributed with parameter λ and $P(X \leq 1) = P(X > 1)$, then what is the value of $Var(X)$?

Options :6406531174336. ✘ $\ln 2$ 6406531174337. ✘ $(\ln 2)^2$ 6406531174338. ✘ $\frac{1}{\ln 2}$ 6406531174339. ✓ $\frac{1}{(\ln 2)^2}$ **Question Number : 68 Question Id : 640653354076 Question Type : MCQ Is Question****Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 3**

Question Label : Multiple Choice Question

What is the Interquartile range (IQR) of the dataset 42, 51, 62, 47, 38, 50, 54, 43?

Options :

6406531174348. ✘ 4.5

6406531174349. ✘ 42.5

6406531174350. ✘ 52.5

6406531174351. ✓ 10

Question Number : 69 Question Id : 640653354078 Question Type : MCQ Is Question**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 3**

Question Label : Multiple Choice Question

An analyst did a survey to know about annual incomes of recent graduates of two different universities and the results are given in Table Q.1.

| Age group (in years) | University A | University B |
|----------------------|--------------|--------------|
| Less than \$20,000 | 40 | 20 |
| \$20,000 to 40,000 | 54 | 36 |
| More than \$40,000 | 76 | 24 |

Table Q.1

If a randomly selected graduate earns more than \$40, 000, then what is the probability that he/she is from University B?

Options :

6406531174356. ✓ $\frac{24}{100}$

6406531174357. ✗ $\frac{24}{80}$

6406531174358. ✗ $\frac{24}{250}$

6406531174359. ✗ $\frac{76}{170}$

Sub-Section Number : 6

Sub-Section Id : 64065351133

Question Shuffling Allowed : Yes

Question Number : 70 Question Id : 640653354065 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Six men and five women apply for a position of administrative in a company and two of the applicants are selected for the interview. If the random variables X and Y denote the number of male and number of female in the interview pool respectively, then calculate the value of $E(X + Y)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 71 **Question Id :** 640653354075 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

Question Label : Short Answer Question

Six letter words (with or without meaning) are made using the letters of the word 'SACHIN'. If all the formed words are now arranged in ascending order, then find the serial number at which the word 'SACHIN' will appear.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

601

Sub-Section Number : 7

Sub-Section Id : 64065351134

Question Shuffling Allowed : No

Question Id : 640653354062 **Question Type :** COMPREHENSION **Sub Question Shuffling**

Allowed : No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A

Think Time : N.A **Minimum Instruction Time :** 0

Question Numbers : (72 to 73)

Question Label : Comprehension

Probability mass function of a random variable X is given as

$$P(X = x) = \begin{cases} kx & x = 1, 2, 3, 4 \\ 0 & \text{otherwise} \end{cases}$$

Based on the given information, answer the subquestions.

Sub questions

Question Number : 72 Question Id : 640653354063 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the value of k .

(Enter the answer correct to one decimal place)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.1

Question Number : 73 Question Id : 640653354064 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

What is the value
of $P(X \leq 3 | X > 3)$?

Options :

6406531174326. ✓ 0

6406531174327. ✘ 1

6406531174328. ✘ $\frac{7}{10}$ 6406531174329. ✘ $\frac{6}{10}$ **Question Id : 640653354069 Question Type : COMPREHENSION Sub Question Shuffling****Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A****Think Time : N.A Minimum Instruction Time : 0****Question Numbers : (74 to 75)**

Question Label : Comprehension

To participate in a game of prediction of runs scored by a team in a cricket match, one needs to pay an entry fee of 10 rupee. If the net gain is uniformly distributed between [-10,10] rupee. Then based on the given information answer the subquestions.

Sub questions**Question Number : 74 Question Id : 640653354070 Question Type : MCQ Is Question****Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 3**

Question Label : Multiple Choice Question

What is the probability that the absolute value of net gain for a person participating in the game will be less than 2 rupees?

Options :6406531174340. ✓ $\frac{1}{5}$

6406531174341. ✘ $\frac{3}{5}$

6406531174342. ✘ $\frac{2}{5}$

6406531174343. ✘ $\frac{4}{5}$

Question Number : 75 Question Id : 640653354071 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the probability that a person participating in this game will have a net gain of 0 rupee?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Id : 640653354072 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (76 to 77)

Question Label : Comprehension

The ratio of boys to girls at IIT Madras is 1.5 : 1. If a group of 6 students is randomly selected, then based on the given information, answer the subquestions.

Sub questions

Question Number : 76 Question Id : 640653354073 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the probability that there will be at least one girl in the selected group of 6 students?
(Enter the answer correct to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.91 to 0.99

Question Number : 77 Question Id : 640653354074 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

What is the probability that there will be exactly 3 girls in the group given that there is at least one girl in the selected group of 6 students? (Enter the answer correct to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.25 to 0.33

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| | |
|--|-------------|
| Section Id : | 64065322247 |
| Section Number : | 3 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 35 |
| Number of Questions to be attempted : | 35 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351135 |
| Question Shuffling Allowed : | No |

Question Number : 78 Question Id : 640653354079 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 2: ENGLISH 2"

**ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.**

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174360. ✓ Yes

6406531174361. ✗ No

Sub-Section Number :

2

Sub-Section Id :

64065351136

Question Shuffling Allowed :

No

Question Id : 640653354080 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (79 to 88)

Question Label : Comprehension

Read the following passage and answer the given subquestions

On weekends, there is hardly any elbow room on Shangumugham Beach in Kerala's capital, Thiruvananthapuram. The smell of roasted corn hangs in the air, vendors mill around the walkway that leads to the beach, families lounge around a 35m-long sculpture of a reclining naked woman — 'Jalakanyaka' by Kanaayi Kunhiraman — that seems to strain against Kerala's conservative ethos yet has come to be one of the most recognised landmarks in the city. It is a familiar beach scene.

The only problem is — there isn't much beach left.

"Every year, I feel the sea is drawing closer," says Indu, a 44-year-old Thiruvananthapuram resident who has been coming to Shangumugham since her childhood. "The beach is so much smaller than it used to be. We would come here to get away from the congestion in the city, and now look how congested the beach has become."

She points to a row of fishing boats lined up along a part of the shore usually reserved for people. The boats were moved after vast tracts of the Shangumugham shoreline were eroded following Cyclone Ockhi, which hit the Kerala coast in December 2017. A nearby road, which runs parallel to the beach, bears testimony to Ockhi's fury — rope and traffic cones cordon off the traffic from long sections of the road that were washed away by the waves.

Even now, the waves are visibly rough — but they do not deter visitors. Beach-goers play a game of racing back to the shore before the water reaches their ankles, laughing aloud when the wave beats them to it. Others try to venture into the water, holding hands with their friends but lose balance when the wave pulls back into the sea. The whistles of coastguards pierce the air,

instructing the crowds to move away from the water. Families with toddlers are turned away from the water.

—Rihan Najib, *The Hindu Business Line*

Sub questions

Question Number : 79 Question Id : 640653354081 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following options best summarise the given article excerpt?

Options :

6406531174362. ❌ The article is about a beach in Kerala.

6406531174363. ✓ The article is about a beach in Thiruvananthapuram, which is diminishing.

6406531174364. ❌ The article is about the history of the people who lived along the coastline of Kerala's beaches.

6406531174365. ❌ The article is about a cyclone that hit Thiruvananthapuram in 2017.

Question Number : 80 Question Id : 640653354082 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following sentences uses the phrase “*cordon off*” incorrectly?

Options :

6406531174366. ❌ The crime scene was cordoned off.

6406531174367. ❌ The police cordon off the street to prevent the mob from entering.

6406531174368. ✓ I cordoned off Valerie for being too rude.

6406531174369. ❌ Due to the ongoing construction, the children's playground has been cordoned off.

Question Number : 81 Question Id : 640653354083 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following statements is true according to the passage?

Options :

6406531174370. ✘ The sculpture named Jalakanyaka goes against the conservative ethos of the state of Kerala.

6406531174371. ✘ The sculpture of the reclining woman is a famous landmark.

6406531174372. ✘ The sculpture of the reclining woman was made by Kanaayi Kunhiraman.

6406531174373. ✓ All of these

Question Number : 82 Question Id : 640653354084 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"A nearby road, which runs parallel to the beach, bears testimony to Ockhi's fury — rope and traffic cones cordon off the traffic from long sections of the road that were washed away by the waves." What does this sentence mean?

Options :

6406531174374. ✘ Cyclone Ockhi has completely destroyed the road running parallel to the beach.

6406531174375. ✘ The road running parallel to the beach is closed and no vehicles are allowed.

6406531174376. ✓ Long parts of the road that were washed away by Ockhi are restricted to vehicles and traffic.

6406531174377. ✘ The impact of Ockhi has forced the authorities to close off a road near the beach.

Question Number : 83 Question Id : 640653354085 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Because of the rough waves, many beach-goers have stopped visiting the Shangumugham Beach.
True or False?

Options :

6406531174378. ✘ TRUE

6406531174379. ✓ FALSE

Question Number : 84 Question Id : 640653354086 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statements pertaining to the impact of Cyclone Ockhi on the beach is true?

Options :

6406531174380. ✓ The fishing boats on the shoreline were moved.

6406531174381. ✘ People were banned from using the boats.

6406531174382. ✓ Heavy erosion occurred on the shoreline.

6406531174383. ✘ People were no longer allowed to get into the water.

Question Number : 85 Question Id : 640653354087 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"We would come here to get away from the congestion in the city, and now look how congested the beach has become." Who is the speaker, and what are they talking about?

Options :

6406531174384. ✓ A resident of Thiruvananthapuram; about the sea coming closer and the crowd on the beach.

6406531174385. ✗ A resident of Thiruvananthapuram; about the impact of the cyclone and the crowd on the beach.

6406531174386. ✗ A coastguard; about the crowd on the beach.

6406531174387. ✗ A resident of Thiruvananthapuram, about adventurous youngsters.

Question Number : 86 Question Id : 640653354088 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"There is hardly any elbow room..." What does this mean?

Options :

6406531174388. ✓ There is almost no room

6406531174389. ✗ There is some room

6406531174390. ✗ There are a few rooms

6406531174391. ✗ There is not much scope

Question Number : 87 Question Id : 640653354089 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What does the author talk about in the last paragraph? Choose the most appropriate option.

Options :

6406531174392. ✗ About the restrictions placed on visitors to the beach.

6406531174393. ✓ About the tension between adventurous visitors and the dangerous waves.

6406531174394. ✗ About the coastguards and their frustrations.

6406531174395. ✗ About toddlers who are not allowed into the water.

Question Number : 88 Question Id : 640653354090 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following words is the opposite of "reclining"?

Options :

6406531174396. ✘ Resting

6406531174397. ✘ Lounging

6406531174398. ✓ Standing

6406531174399. ✘ Leaning

Question Id : 640653354091 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (89 to 98)

Question Label : Comprehension

Listen to the audio sample and answer the given subquestions:



885_640653_0_1984128_hs1002fdfne1s1a1.mp3

Sub questions

Question Number : 89 Question Id : 640653354092 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the topic of the audio?

Options :

6406531174400. ✘ Uneducated young men in India

6406531174401. ✓ Higher Education in India

6406531174402. ✗ Primary Education in India

6406531174403. ✗ The Demography of India

Question Number : 90 Question Id : 640653354093 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the meaning of "*demography*"?

Options :

6406531174404. ✗ The study of democracy

6406531174405. ✓ The composition of human population

6406531174406. ✗ The study of oration

6406531174407. ✗ The art of demagoguery

Question Number : 91 Question Id : 640653354094 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"Half the Indian population is pretty much under 25." What is the phrase "*pretty much*" used to convey?

Options :

6406531174408. ✗ To convey uncertainty

6406531174409. ✗ To convey surety

6406531174410. ✓ To convey approximation

6406531174411. ✗ To convey probability

Question Number : 92 Question Id : 640653354095 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"The gap between the average age of the Indian person and of the Indian cabinet – I think we hold the world record for that." What does Tharoor mean by this?

Options :

6406531174412. ✓ That the people in power in the country are much older than the average citizen of the country.

6406531174413. ✗ That the people ruling the country are incompetent.

6406531174414. ✗ That the people ruling the country are all older than 65.

6406531174415. ✗ That the average citizen's age is less than 20, while the average age of those in the Indian cabinet is 45.

Question Number : 93 Question Id : 640653354096 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"We are an amazingly young country." Why is this such an amazing and important fact for Tharoor?

Options :

6406531174416. ✗ Because the average age of China is inching towards 50, while India's average age is still at 25.

6406531174417. ✗ Because young college graduates in India do not generally take part in society.

6406531174418. ✓ Because India consists of a primarily young population, while other countries such as US, China and Japan are ageing rapidly.

6406531174419. ✗ Because all young people in India are college-educated.

Question Number : 94 Question Id : 640653354097 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

"By 2020, we'll have 160 million people between 20-24 years old in India." Which organisation has worked out this calculation?

Options :

6406531174420. ✓ The International Labour Organisation

6406531174421. ✗ The Food and Agricultural Organisation

6406531174422. ✗ The United Nations Organisation

6406531174423. ✗ The International Court of Law

Question Number : 95 Question Id : 640653354098 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the meaning of the phrase "work out" as it is used in this audio?

Options :

6406531174424. ✗ Exercise

6406531174425. ✗ Plan or devise something

6406531174426. ✓ Solve something by calculation

6406531174427. ✗ Have a good, desired result

Question Number : 96 Question Id : 640653354099 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the meaning of the word "poised"?

Options :

6406531174428. ✗ Be unprepared

6406531174429. ✗ Be ferocious

6406531174430. ✓ Be ready and prepared

6406531174431. ❖ Pose and act

Question Number : 97 Question Id : 640653354100 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statements is true, from what you can understand from the audio?

Options :

6406531174432. ❖ India has not progressed in the education realm since Independence.

6406531174433. ✓ India has expanded educational access, and has also strived for equity in education.

6406531174434. ✓ The quality or excellence of Indian higher educational institutions is lacking.

6406531174435. ✓ Because India is a young country, education of its young people becomes crucial to its development.

Question Number : 98 Question Id : 640653354101 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the meaning of the phrase "*in a nutshell*"?

Options :

6406531174436. ❖ In spite of

6406531174437. ❖ In a single word

6406531174438. ✓ In the fewest possible words

6406531174439. ❖ In recognition of the lack of time

Question Id : 640653354102 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (99 to 108)

Question Label : Comprehension

Listen to the audio and answer the given subquestions:



885_640653_0_1984128_hs1002fdfne1s1a2.mp3

Sub questions

Question Number : 99 Question Id : 640653354103 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The word *sharpening* is stressed on the _____ .

Options :

6406531174440. ✓ First syllable

6406531174441. ✗ Second syllable

6406531174442. ✗ Third syllable

6406531174443. ✗ No syllables receive stress

Question Number : 100 Question Id : 640653354104 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The word *achieve* is stressed on the _____ .

Options :

6406531174444. ✗ First syllable

6406531174445. ✓ Second syllable

6406531174446. ✗ Third syllable

6406531174447. ✗ Fourth syllable

Question Number : 101 Question Id : 640653354105 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The word *interesting* is stressed on the _____.

Options :

6406531174448. ✓ First syllable

6406531174449. ✗ Second syllable

6406531174450. ✗ Third syllable

6406531174451. ✗ Fourth syllable

Question Number : 102 Question Id : 640653354106 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the number of syllables in the word *something*.

Options :

6406531174452. ✗ 1

6406531174453. ✓ 2

6406531174454. ✗ 3

6406531174455. ✗ 4

Question Number : 103 Question Id : 640653354107 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the number of syllables in the word *consecutively*.

Options :

6406531174456. ✘ 2

6406531174457. ✘ 3

6406531174458. ✓ 5

6406531174459. ✘ 6

Question Number : 104 Question Id : 640653354108 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the number of syllables in the word *aspirational*.

Options :

6406531174460. ✓ 5

6406531174461. ✘ 1

6406531174462. ✘ 2

6406531174463. ✘ 3

Question Number : 105 Question Id : 640653354109 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The vowel in the word *says* is _____.

Options :

6406531174464. ✘ Short

6406531174465. ✓ Long

Question Number : 106 Question Id : 640653354110 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The vowel in the second syllable of the word *scientists* is _____

Options :

6406531174466. ✓ Short

6406531174467. ✗ Long

Question Number : 107 Question Id : 640653354111 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate pauses for the following passage as you hear in the audio:

It's worked dramatically I am already inspired to be addressing this really august intellectual gathering of people from Harvard a place that my mother thought I will never reach

Options :

6406531174468. ✗ //It's worked/ dramatically I am already inspired/ to be addressing this really august intellectual/ gathering of people/ from Harvard a place that my mother thought I will never/ reach//

6406531174469. ✗ //It's worked dramatically I am/ already inspired to be addressing this really august intellectual/ gathering of people from Harvard a/ place that my mother thought I/ will never reach//

6406531174470. ✓ //It's worked dramatically I am already inspired/ to be addressing/ this really august intellectual gathering of people from Harvard/ a place that my/ mother thought I will never reach//

6406531174471. ✗ //It's worked dramatically/ I am already inspired/ to be addressing this really august intellectual gathering/ of people from Harvard a place/ that my mother thought I will never reach//

Question Number : 108 Question Id : 640653354112 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Choose the appropriate pauses for the following sentence as you hear in the audio:

But I am just an actor and I am going to just give you my dream shamelessly because that's the thing that I can do best

Options :

6406531174472. ❌ //But I am just// an actor and I am going to/ just give you/ my dream shamelessly because/ that's/ the thing that I/ can do best//

6406531174473. ✓ //But I am just an actor/ and I am going to just give you my dream shamelessly/ because/ that's the thing that I can do best//

6406531174474. ❌ //But/ I am just an actor and I/ am going to just give/ you my dream shamelessly because that's// the thing that I can do best//

6406531174475. ❌ //But I am just an actor and I am/ going to just give you/ my dream shamelessly because/ that's the thing that I can do best//

Sub-Section Number : 3

Sub-Section Id : 64065351137

Question Shuffling Allowed : No

Question Id : 640653354113 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (109 to 113)

Question Label : Comprehension

Read the following exchange between an employer and a candidate (potential employee) and answer the given subquestions:

Anisha: Min, it's so nice to meet you in this setting. Thank you for taking the time to interview for the role of instructional designer at Bridgespan Education. I'm curious to hear more about your interest in the learning design industry. Why are you in this industry?

Min: Nice to meet you too! I'm so excited to be here today and thankful to you for having given me this opportunity. So, I've been a curriculum developer in various educational and corporate settings for the past 10 years. I'm very passionate about creating data-driven and aesthetically appealing learning solutions in different formats — be it instructor-led, e-learning, and blended learning. I applied for this role because I watched a news piece on how your CEO Mr. Raul brought in an indoor mapping tool that made hybrid work possible for employees working from anywhere — I thought that was quite amazing, and I'd be thrilled to meet him sometime.

Anisha: We can definitely have you meet him if things work out! It's great that you've been following our company for some time now. I'd like to follow up with another question — why this role and this company, in particular?

Min: Well, there are three reasons I applied for this role in particular — I'd love to dive into them if you'd like to know more about that!

Anisha: *nods enthusiastically*

Min: The first is that your company is known to put a strong emphasis on innovations and research, and I'd love to be a part of a company that wants to constantly develop their products. Secondly, I'm also huge on teamwork and collaboration, and given that the role and your company's values emphasise teamwork, it sounded like the perfect fit for me. Thirdly, the position matches my prior experience, but is also challenging enough that I know I'll have the space to pick up new skills and grow.

Anisha: That's great, thanks so much!

Sub questions

Question Number : 109 Question Id : 640653354114 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Why does Anisha use the phrase "*I'm curious to hear more about...*"

Options :

6406531174476. ✘ She uses it to intimidate Min.
6406531174477. ✓ She uses it to start off the conversation on an easy note.
6406531174478. ✘ She wants Min to introduce herself.
6406531174479. ✘ She wants to know if Min is lying on her CV.

Question Number : 110 Question Id : 640653354115 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the meaning of the phrase "*I'm huge on...*"?

Options :

6406531174480. ✘ I'm talented at
6406531174481. ✘ I'm against
6406531174482. ✓ I prioritise and value
6406531174483. ✘ I dislike

Question Number : 111 Question Id : 640653354116 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What does Min do as soon as she starts speaking?

Options :

6406531174484. ✘ She directly answers Alisha's question on her reason for being in the e-learning industry.
6406531174485. ✘ She falters as she tries to introduce herself.
6406531174486. ✘ She expresses disinterest at the role.
6406531174487. ✓ She expresses her enthusiasm for the interview and the company.

Question Number : 112 Question Id : 640653354117 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following things about Bridgespan Education were a factor in her applying to the role?

Options :

6406531174488. ✓ Their focus on innovation and research.

6406531174489. ✓ Their work culture, which values teamwork.

6406531174490. ✗ Their status as a Fortune 500 company.

6406531174491. ✗ Their reputation as the best learning solutions start-up.

Question Number : 113 Question Id : 640653354118 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What does Min mean when she says "*I'd love to dive right into them...*"?

Options :

6406531174492. ✗ She would like to talk about her CV.

6406531174493. ✓ She enthusiastically signals that she wants to go into more detail.

6406531174494. ✗ She wants to avoid talking about her reasons behind applying.

6406531174495. ✗ She wants to give a broad reason behind her application.

Sub-Section Number : 4

Sub-Section Id : 64065351138

Question Shuffling Allowed : Yes

Question Number : 114 Question Id : 640653354119 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Our motorcycle broke down; we came last. This sentence is an example of _____.

Options :

6406531174496. ✓ Compound sentence

6406531174497. ✗ Simple sentence

6406531174498. ✗ Complicated sentence

6406531174499. ✗ Complex sentence

Question Number : 115 Question Id : 640653354120 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the independent clause in the following sentence:

Robert ran away because John yelled at him.

Options :

6406531174500. ✓ Robert ran away

6406531174501. ✗ Because John yelled at him.

6406531174502. ✗ Robert ran away because John yelled at him.

6406531174503. ✗ No independent clause

Question Number : 116 Question Id : 640653354121 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the adjectival clause in the following sentence.

People whose cats shed need to vacuum often.

Options :

6406531174504. ✘ Whose cats shed need to vacuum often

6406531174505. ✓ Whose cats shed

Question Number : 117 Question Id : 640653354122 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the number of suffixes in the following sentence.

It was a warm summer month: the flowers were blooming, the birds were singing, and the days seemed endless.

Options :

6406531174506. ✘ 1

6406531174507. ✘ 3

6406531174508. ✘ 5

6406531174509. ✓ 7

Question Number : 118 Question Id : 640653354123 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Context :At a job fair, an interviewer to an interviewee.

A question about her hobbies.

Options :

6406531174510. ✓ Do you mind sharing with us what your hobbies are?

6406531174511. ✘ If you could tell us what your hobbies are, we can understand what sort of an energy revolves around you as a person by calculating the weightage of what you consider as

worthy of your free time, and thereby see if you are a worthy candidate or not.

6406531174512. ✳ Tell me what your hobbies are. We don't have much time, so make it quick.

6406531174513. ✳ Do you think you can let us into the sacred space of your personal life and share with us what engages you in your free time? With this, we mean your hobbies, if you don't mind.

Question Number : 119 Question Id : 640653354124 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Context :At a job fair, an interviewer to an interviewee.

About her professional qualifications.

Options :

6406531174514. ✳ I don't see any work experience here in your resume. Get out.

6406531174515. ✳ We were wondering if you could elaborate on the lack of work experience in your case, and were strikingly bothered. Could you please let us know if we should continue this interview?

6406531174516. ✓ It shows here that you do not have previous work experience in this field. Is this your first job? Would you mind elaborating?

6406531174517. ✳ None of these.

Question Number : 120 Question Id : 640653354125 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Imagine that you are in a formal meeting with a client. In such a context, you are asking her whether she would like to review a file. From the options below, which would be the most appropriate way to ask this question?

Options :

6406531174518. ✘ Will you like to take a look at the file?
6406531174519. ✘ You will like to take a look at the file?
6406531174520. ✓ Would you like to have a look at this file?
6406531174521. ✘ Do you want this file?

Question Number : 121 Question Id : 640653354126 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"Asoka was a great emperor." The interrogative form of this sentence is _____

Options :

6406531174522. ✘ Will Asoka be a great emperor?
6406531174523. ✘ Did Asoka become a great emperor?
6406531174524. ✘ Why is Asoka a great emperor?
6406531174525. ✓ Was Asoka a great emperor?

Question Number : 122 Question Id : 640653354127 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Convert the following sentence to active voice.

The cup was broken by Sandip.

Options :

6406531174526. ✘ The cup were broken by Sandip.
6406531174527. ✘ Sandip is breaking the cups.
6406531174528. ✓ Sandip broke the cup.
6406531174529. ✘ Sandip will break the cup.

Question Number : 123 Question Id : 640653354128 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

He rejected their proposals despite of their wonderful marketing. This sentence is grammatically correct.

Options :

6406531174530. ✘ TRUE

6406531174531. ✓ FALSE

Question Number : 124 Question Id : 640653354129 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Fill in the blank with verbs that are in the present continuous tense.

"Raya ____ the dragon."

Options :

6406531174532. ✓ Is slaying

6406531174533. ✘ Slayed

6406531174534. ✘ Will slay

6406531174535. ✘ Will be slaying

Question Number : 125 Question Id : 640653354130 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the verb tense and aspect of the sentence:

"Raveena's friends will be working tomorrow."

Options :

6406531174536. ✘ Simple present

6406531174537. ✘ Simple future

6406531174538. ✓ Future continuous

6406531174539. ✘ Future perfect

Question Number : 126 Question Id : 640653354131 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the adverb in the following sentence.

The lazy dog ran into a lovely wolf.

Options :

6406531174540. ✘ Lazy

6406531174541. ✘ Lovely

6406531174542. ✘ A lovely wolf

6406531174543. ✓ This sentence does not have an adverb

Question Number : 127 Question Id : 640653354132 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"Before the storm, the city council failed to inform residents of the disaster. _____, the death toll was enormous."

Options :

6406531174544. ✓ Therefore

6406531174545. ✗ At the same time

6406531174546. ✗ Nevertheless

6406531174547. ✗ Because

Question Number : 128 Question Id : 640653354133 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Many smokers believe that e-cigarettes can help them quit smoking. ____, scientific researches shows that e-cigarettes are more addictive and lethal than traditional cigarettes.

Options :

6406531174548. ✗ In addition

6406531174549. ✓ However

6406531174550. ✗ As a consequence

6406531174551. ✗ but

Question Number : 129 Question Id : 640653354134 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

In the following sentence, fill in the blank with the most appropriate modal verb.

The junior employee told her boss: "I think we _____ confirm the hotel rooms now".

Options :

6406531174552. ✗ Would

6406531174553. ✗ Are

6406531174554. ✗ Will

6406531174555. ✓ Could

Question Number : 130 Question Id : 640653354135 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

In the following sentence, fill in the blank with the most appropriate modal verb.

"They told me that if they had the power, they _____ have opposed the majority."

Options :

6406531174556. ❌ Can

6406531174557. ❌ Will

6406531174558. ❌ Could

6406531174559. ✓ Would

Question Number : 131 Question Id : 640653354136 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the modal auxiliary in the following sentence.

Rohit must play in the series decider.

Options :

6406531174560. ❌ Play

6406531174561. ❌ In

6406531174562. ❌ Series

6406531174563. ✓ Must

Question Number : 132 Question Id : 640653354137 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"The tea was ___ hot while served." The appropriate degree adverb here is ____.

Options :

6406531174564. Very

6406531174565. Too

6406531174566. Both Very and Too

6406531174567. None of these

Question Number : 133 Question Id : 640653354138 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify the adjective(s) in the following sentence.

Siva had quite a bad day yesterday.

Options :

6406531174568. Day

6406531174569. Bad

6406531174570. Yesterday

6406531174571. Quite

Question Number : 134 Question Id : 640653354139 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

He won the battle against the pesticide company in court. The meaning of this sentence is ____.

Options :

6406531174572. ✘ He fought a war against the pesticide company

6406531174573. ✓ He won the case against the pesticide company

6406531174574. ✘ He fought a war at court

6406531174575. ✘ He defeated the pesticide company in a war

Question Number : 135 Question Id : 640653354140 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

These people are so slow, _____?

Options :

6406531174576. ✘ Don't they

6406531174577. ✘ Didn't they

6406531174578. ✘ Isn't they

6406531174579. ✓ Aren't they

Question Number : 136 Question Id : 640653354141 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"Our boss sent the document to the client by email." In this sentence, identify the indirect object.

Options :

6406531174580. ✘ Sent

6406531174581. ✘ Our boss

6406531174582. ✘ The document

6406531174583. ✓ The client

Question Number : 137 Question Id : 640653354142 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

For the direct question "*When does the registration begin?*", identify a possible embedded question from the options given below.

Options :

6406531174584. ❌ I'd like to know when does the registration begin.

6406531174585. ✓ I'd like to know when the registration begins.

6406531174586. ❌ I was wondering if the registration will begin.

6406531174587. ❌ I wanted to know when does the registration begin.

Question Number : 138 Question Id : 640653354143 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

_____ they outrun you, they will be selected.

Options :

6406531174588. ✓ If

6406531174589. ❌ Whether

6406531174590. ❌ Either *if* or *whether* can be used

Question Number : 139 Question Id : 640653354144 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

"*The engineer constructed this house.*" This sentence is in _____.

Options :

6406531174591. ✓ Active voice

6406531174592. ✘ Passive voice

Question Number : 140 Question Id : 640653354145 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

'The town where my uncle lives uses only solar energy.' The relative clause here modifies the subject.

Options :

6406531174593. ✓ TRUE

6406531174594. ✘ FALSE

Question Number : 141 Question Id : 640653354146 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Pick the odd one out.

Presumably, biologically, honestly, apparently

Options :

6406531174595. ✘ Presumably

6406531174596. ✓ Biologically

6406531174597. ✘ Honestly

6406531174598. ✘ Apparently

Question Number : 142 Question Id : 640653354147 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Thomas drives a car. The negative of this sentence will be - "Thomas _____ drive a car."

Options :

6406531174599. ✓ Does not

6406531174600. ✗ Do not

6406531174601. ✗ Not

6406531174602. ✗ Is not

Question Number : 143 Question Id : 640653354148 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

I've never met _____ as bright as her.

Options :

6406531174603. ✓ Anybody

6406531174604. ✗ Anything

6406531174605. ✗ Someone

6406531174606. ✗ Something

Sem2 Maths2

Section Id : 64065322248

Section Number : 4

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 15

Number of Questions to be attempted : 15

Section Marks : 50

Display Number Panel : Yes

Group All Questions : No

Enable Mark as Answered Mark for Review and

Yes

Clear Response :

Maximum Instruction Time :

0

Sub-Section Number :

1

Sub-Section Id :

64065351139

Question Shuffling Allowed :

No

Question Number : 144 Question Id : 640653354149 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 2/DIRECT ENTRY DIPLOMA : MATHEMATICS FOR DATA SCIENCE 2"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174607. ✓ Yes

6406531174608. ✗ No

Sub-Section Number :

2

Sub-Section Id :

64065351140

Question Shuffling Allowed :

No

Question Id : 640653354150 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (145 to 146)

Question Label : Comprehension

Consider a matrix $A = \begin{bmatrix} a & b \\ b & a \end{bmatrix}$ and a function

$f : \mathbb{R}^2 \rightarrow \mathbb{R}$ such that $f(a, b) = \det(A)$.

Answer the given subquestions:

Sub questions

Question Number : 145 **Question Id :** 640653354151 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

Find the number of critical points of the function $f(a, b)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 146 **Question Id :** 640653354152 **Question Type :** MSQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Multiple Select Question

Which of the following options is/are true?

Options :

A is not a symmetric matrix for all

6406531174610. ✘ $a, b \in \mathbb{R}$.

6406531174611. ✓ A^2 is a symmetric matrix for all $a, b \in \mathbb{R}$.

6406531174612. ✓

If (β, γ) is a critical point of $f(a, b)$, then the matrix

$A = \begin{pmatrix} \beta & \gamma \\ \gamma & \beta \end{pmatrix}$ satisfies that $A^2 = A$.

If (β, γ) is a critical point of $f(a, b)$, then the matrix

$A = \begin{pmatrix} \beta & \gamma \\ \gamma & \beta \end{pmatrix}$ satisfies that $\text{rank}(A) = 1$.

6406531174613. *

Sub-Section Number : 3

Sub-Section Id : 64065351141

Question Shuffling Allowed : No

Question Id : 640653354153 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (147 to 149)

Question Label : Comprehension

Consider the matrix $A = \begin{bmatrix} x & -2 & 0 \\ y & 3 & 2 \\ z & 1 & 3 \end{bmatrix}$. Answer the given subquestions:

Sub questions

Question Number : 147 Question Id : 640653354154 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Let $T : \mathbb{R}^3 \rightarrow \mathbb{R}$ be a linear transformation such that $T(x, y, z) = \det(A)$. Then which of following options is/are true?

Options :

6406531174614. * T is injective.

6406531174615. ✓ T is surjective.

6406531174616. ✎ T is an isomorphism.

6406531174617. ✎ T is neither injective nor surjective.

Question Number : 148 Question Id : 640653354155 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Let W be a subspace of \mathbb{R}^3 (with inner product as the dot product) such that $W = \{(x, y, z) \mid \det(A) = 0\}$. If β is an orthonormal basis of W , then find the cardinality of the set β .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 149 Question Id : 640653354156 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Let $T : \mathbb{R}^3 \rightarrow \mathbb{R}$ be a linear transformation such that $T(x, y, z) = \det(A)$. Let B be the matrix representation of T with respect to some ordered bases for the domain and the codomain. Let $m \times n$ be the order of the matrix B and r be the nullity of B . Then find the value of $m + n + r$.

Then find the value of $m + n + r$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Sub-Section Number : 4

Sub-Section Id : 64065351142

Question Shuffling Allowed : No

Question Id : 640653354157 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Question Numbers : (150 to 152)

Question Label : Comprehension

Let $T: \mathbb{R}^3 \rightarrow \mathbb{R}^3$ be the linear transformation defined by
 $T(x, y, z) = (x + 3z, x - y + 2z, x + 2y + 5z).$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 150 **Question Id :** 640653354158 **Question Type :** SA **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Short Answer Question

Find the nullity of T .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 151 Question Id : 640653354159 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Find the rank of T .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 152 Question Id : 640653354160 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Choose the correct option(s).

Options :

{(-6, -2, 2)} is a basis

6406531174622. ✓ for the kernel of T .

{(-3, 0, 1), (0, 1, -1)} is a

6406531174623. ✗ basis for the kernel of T .

There exists an isomorphism

6406531174624. ✓ from the range of T to \mathbb{R}^2 .

There exists an isomorphism

6406531174625. ✗ from the range of T to \mathbb{R} .

| | |
|-------------------------------------|-------------|
| Sub-Section Number : | 5 |
| Sub-Section Id : | 64065351143 |
| Question Shuffling Allowed : | Yes |

Question Number : 153 Question Id : 640653354161 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

An inner product on a vector space V is a function $\langle \cdot, \cdot \rangle : V \times V \rightarrow \mathbb{R}$ satisfying the following conditions:

Condition 1: $\langle v, v \rangle > 0$ for all $v \in V \setminus \{0\}$; $\langle v, v \rangle = 0$ if and only if $v = 0$.

Condition 2: $\langle v_1 + v_2, v_3 \rangle = \langle v_1, v_3 \rangle + \langle v_2, v_3 \rangle$.

Condition 3: $\langle v_1, v_2 \rangle = \langle v_2, v_1 \rangle$.

Condition 4: $\langle cv_1, v_2 \rangle = c\langle v_1, v_2 \rangle$

Let $V = \mathbb{R}^2$ and consider the function defined as:

$$\begin{aligned}\langle \cdot, \cdot \rangle : V \times V &\rightarrow \mathbb{R} \\ \langle (x_1, x_2), (y_1, y_2) \rangle &= x_1 y_1 - 2x_2 y_2.\end{aligned}$$

Which of the following are satisfied by the above function?

Options :

6406531174626. ❌ Condition 1 is satisfied.

6406531174627. ✓ Condition 2 is satisfied.

6406531174628. ✓ Condition 3 is satisfied.

6406531174629. ✓ Condition 4 is satisfied.

Question Number : 154 Question Id : 640653354168 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following options is/are true?

$$f(x, y) = \frac{x^3y}{x^6 + y^2}$$

Options :

6406531174635. ❌ $\lim_{(x,y) \rightarrow (0,0)} f(x, y) = 0$

6406531174636. ❌ $\lim_{(x,y) \rightarrow (0,0)} f(x, y) = \frac{1}{2}$

6406531174637. ❌ $\lim_{(x,y) \rightarrow (0,0)} f(x, y) = 1$

6406531174638. ✓ $\lim_{(x,y) \rightarrow (0,0)} f(x, y)$ does not exist.

6406531174639. ✓ $f(x, y)$ is not continuous at $(0, 0)$

6406531174640. ❌ $f(x, y)$ is continuous at $(0, 0)$.

Question Number : 155 Question Id : 640653354180 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Let $A = \begin{pmatrix} 1 & 2 & -1 \\ 2 & 1 & 1 \\ -1 & 1 & -2 \end{pmatrix}$ and $B = \begin{pmatrix} -1 & 3 & 2 \\ 0 & 2 & 2 \\ -1 & 1 & 0 \end{pmatrix}$. Choose the correct option(s).

Options :

6406531174662. ❌ A is not equivalent to B .

6406531174663. ✓ A is equivalent to B .

6406531174664. ❌ A is similar to B .

6406531174665. ✓ A is not similar to B.

Sub-Section Number : 6

Sub-Section Id : 64065351144

Question Shuffling Allowed : Yes

Question Number : 156 Question Id : 640653354162 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

If a , b and c are three positive numbers which satisfy the following two properties:

- The sum of a , b and c is 12.
- The sum of the squares of a , b , c is minimum among the sum of squares of any such positive numbers which sum up to 12.

Find the value of $a - 2b + c$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

-6

Sub-Section Number : 7

Sub-Section Id : 64065351145

Question Shuffling Allowed : No

Question Id : 640653354163 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (157 to 160)

Question Label : Comprehension

Consider the function $f(x, y) = 2x^3 + 6xy^2 - 3y^3 - 150x$.

Answer the given subquestions:

Sub questions

Question Number : 157 Question Id : 640653354164 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the number of local maxima using the Hessian test.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 158 Question Id : 640653354165 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the number of local minima using the Hessian test.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 159 Question Id : 640653354166 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the number of saddle points using the Hessian test.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 160 Question Id : 640653354167 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Find the number of points at which the Hessian test is indeterminate.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Id : 640653354181 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (161 to 163)

Question Label : Comprehension

The price of a product ($f(x, y)$) depends on the price (x) of the raw materials and the price (y) of transportation of the product to the market according to

$$f : \mathbb{R}^2 \rightarrow \mathbb{R}$$

$$f(x, y) = \begin{cases} x^3 - xy^2 & \text{if } x \neq y \\ x + y & \text{otherwise} \end{cases}$$

Answer the given subquestions:

Sub questions

Question Number : 161 Question Id : 640653354182 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What will be the ratio of the price of the raw materials and the price of the transportation ($x : y$) when $y > x$, if the rate of change of the price of the product with respect to the price of the raw materials is 0? (In this context x and y both are always positive).

Options :

6406531174666. ✘ 1 : 1

6406531174667. ✘ 1 : 3

6406531174668. ✓ 1 : $\sqrt{3}$

The ratio cannot be determined using the given information.

6406531174669. ✘

Question Number : 162 Question Id : 640653354183 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statements are true?

Options :

6406531174670. ✘ $f(x, y)$ is a linear function in its domain.

6406531174671. ✓ $f(cx, cy) = c^3 f(x, y)$ for any real number c , if $x \neq y$.

6406531174672. ✓ $f(x, y)$ is continuous at $(0, 0)$.

If the price of raw material and transportation of the product approaches 6406531174673. ✓ 3 and 2 respectively, then the price of the product approaches 15.

If the price of raw material and transportation of the product approaches 6406531174674. ✘ 3 and 2 respectively, then the price of the product approaches 5.

Question Number : 163 Question Id : 640653354184 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

If the rate of change of the price of the product along the direction of the vector $(1, 1)$ is $\frac{1}{\sqrt{2}}[ka^2 + lab + mb^2]$, when the price of raw material is a and the price of transportation of the product to the market is b (where $a \neq b$), then find the value of $k - l + m$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Sub-Section Number : 8

Sub-Section Id : 64065351146

Question Shuffling Allowed : Yes

Question Number : 164 **Question Id :** 640653354169 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following is true for the function:

$$f(x, y) = \frac{x^3 - y^3}{x - y}$$

Options :

6406531174641. ❌ $\lim_{(x,y) \rightarrow (1,-1)} f(x, y) = 0$

6406531174642. ✓ $\lim_{(x,y) \rightarrow (1,-1)} f(x, y) = 1$

6406531174643. ❌ $\lim_{(x,y) \rightarrow (1,-1)} f(x, y) = 2$

6406531174644. ❌ $\lim_{(x,y) \rightarrow (1,-1)} f(x, y)$ does not exist.

Question Number : 165 **Question Id :** 640653354170 **Question Type :** MCQ **Is Question**

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the function $f(x, y) = x^3 + y^3$. Which of the following affine subspaces represent the tangent line at the point $(1, 1)$ in the direction of the vector $(1, 1)$?

Options :

$$\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}}\}$$

6406531174645. ❌

$$\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}} = \frac{z-2}{\frac{1}{\sqrt{2}}}\}$$

6406531174646. ❌

$$\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}} = \frac{z-2}{\frac{6}{\sqrt{2}}}\}$$

6406531174647. ✓

$$\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x}{\frac{1}{\sqrt{2}}} = \frac{y}{\frac{1}{\sqrt{2}}} = \frac{z}{\frac{6}{\sqrt{2}}}\}$$

6406531174648. ❌

Question Number : 166 Question Id : 640653354176 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following option is/are true?

Options :

If L and L' are two affine subspaces of \mathbb{R}^3 , then $L \cap L'$ is an affine subspace of \mathbb{R}^3 .

6406531174653. ✓

Let $Ax = b$ be a system of linear equations with infinitely many solutions and let P be an invertible matrix such that product PA is well defined.

6406531174654. ❌ Then the system of linear equations $PAx = b$ has infinitely many solutions.

Let A and B be two matrices such that reduced echelon form of A and B are the same. Then $\text{rank}(A) > \text{rank}(B)$.
6406531174655. *

Let $Ax = 0$ be a system of linear equations such that reduced echelon form of the coefficient matrix A is the identity matrix.
6406531174656. * Then the system $Ax = 0$ has infinitely many solutions.

Sub-Section Number : 9

Sub-Section Id : 64065351147

Question Shuffling Allowed : No

Question Id : 640653354171 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (167 to 170)

Question Label : Comprehension

Consider $V = \mathbb{R}^3$ with inner product as the dot product and $W = \{(x, y, z) \mid x = y, z = 0\}$ is a subspace of V .

Let $P_W: V \rightarrow W$ be a projection on W .

Answer the given subquestions:

Sub questions

Question Number : 167 Question Id : 640653354172 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Find the dimension of the image space P_W .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 168 Question Id : 640653354173 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the dimension of the null space of P_W .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 169 Question Id : 640653354174 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

If $v \in W$ is such that $\|v\| = 3$,

then find $\|P_W(v)\|$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 170 Question Id : 640653354175 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Let A be the matrix representation of P_W with respect to some orthonormal bases β and γ for V and W , respectively. Then find the dimension of the null space A^2 .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Sub-Section Number : 10

Sub-Section Id : 64065351148

Question Shuffling Allowed : No

Question Id : 640653354177 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (171 to 172)

Question Label : Comprehension

Let $A = \begin{pmatrix} 2 & 0 & 2 \\ -2 & 1 & 2 \\ 1 & 4 & -1 \end{pmatrix}$. Let B be the matrix whose rows are obtained by normalizing the rows of A .

Answer the given subquestions about matrix B .

Sub questions

Question Number : 171 Question Id : 640653354178 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Choose the correct options about the matrix B .

Options :

A and B have the same reduced row

6406531174657. ✓ echelon form.

6406531174658. ✗ $BB^T x = 0$ has infinitely many solutions.

6406531174659. ✓ B is an orthogonal matrix.

6406531174660. ✗ The columns of B are not orthonormal.

Question Number : 172 Question Id : 640653354179 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is $z_2 + 2z_3$, where $z = (z_1, z_2, z_3)^T$ is
the solution of $Bz = (2, -2, 1)^T$ obtained
using the Cramer's rule?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

| | |
|---|-------------|
| Section Id : | 64065322249 |
| Section Number : | 5 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 12 |
| Number of Questions to be attempted : | 12 |
| Section Marks : | 40 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351149 |
| Question Shuffling Allowed : | No |

Question Number : 173 Question Id : 640653354185 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 2/DIRECT ENTRY DIPLOMA : STATISTICS FOR DATA SCIENCE 2"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174676. ✓ Yes

6406531174677. ✗ No

Question Number : 174 Question Id : 640653354186 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Discrete random variables:

| Distribution | PMF ($f_X(k)$) | CDF ($F_X(x)$) | $E[X]$ | $\text{Var}(X)$ |
|--|---|---|-----------------|--------------------|
| Uniform(A) $A = \{a, a+1, \dots, b\}$ | $\frac{1}{n}, \quad x = k$ $n = b - a + 1$ $k = a, a+1, \dots, b$ | $\begin{cases} 0 & x < 0 \\ \frac{k-a+1}{n} & k \leq x < k+1 \\ & k = a, a+1, \dots, b-1, b \\ 1 & x \geq n \end{cases}$ | $\frac{a+b}{2}$ | $\frac{n^2-1}{12}$ |
| Bernoulli(p) | $\begin{cases} p & x = 1 \\ 1-p & x = 0 \end{cases}$ | $\begin{cases} 0 & x < 0 \\ 1-p & 0 \leq x < 1 \\ 1 & x \geq 1 \end{cases}$ | p | $p(1-p)$ |
| Binomial(n, p) | ${}^n C_k p^k (1-p)^{n-k}, \quad k = 0, 1, \dots, n$ | $\begin{cases} 0 & x < 0 \\ \sum_{i=0}^k {}^n C_i p^i (1-p)^{n-i} & k \leq x < k+1 \\ & k = 0, 1, \dots, n \\ 1 & x \geq n \end{cases}$ | np | $np(1-p)$ |
| Geometric(p) | $(1-p)^{k-1} p, \quad k = 1, \dots, \infty$ | $\begin{cases} 0 & x < 0 \\ 1 - (1-p)^k & k \leq x < k+1 \\ & k = 1, \dots, \infty \end{cases}$ | $\frac{1}{p}$ | $\frac{1-p}{p^2}$ |
| Poisson(λ) | $\frac{e^{-\lambda} \lambda^k}{k!}, \quad k = 0, 1, \dots, \infty$ | $\begin{cases} 0 & x < 0 \\ e^{-\lambda} \sum_{i=0}^k \frac{\lambda^i}{i!} & k \leq x < k+1 \\ & k = 0, 1, \dots, \infty \end{cases}$ | λ | λ |

Continuous random variables:

| Distribution | PDF ($f_X(k)$) | CDF ($F_X(x)$) | $E[X]$ | $\text{Var}(X)$ |
|---------------------------|--|---|-------------------------------|--|
| Uniform $[a, b]$ | $\frac{1}{b-a}, a \leq x \leq b$ | $\begin{cases} 0 & x \leq a \\ \frac{x-a}{b-a} & a < x < b \\ 1 & x \geq b \end{cases}$ | $\frac{a+b}{2}$ | $\frac{(b-a)^2}{12}$ |
| Exp(λ) | $\lambda e^{-\lambda x}, x > 0$ | $\begin{cases} 0 & x \leq 0 \\ 1 - e^{-\lambda x} & x > 0 \end{cases}$ | $\frac{1}{\lambda}$ | $\frac{1}{\lambda^2}$ |
| Normal(μ, σ^2) | $\frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right),$ $-\infty < x < \infty$ | No closed form | μ | σ^2 |
| Gamma(α, β) | $\frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, x > 0$ | | $\frac{\alpha}{\beta}$ | $\frac{\alpha}{\beta^2}$ |
| Beta(α, β) | $\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$ $0 < x < 1$ | | $\frac{\alpha}{\alpha+\beta}$ | $\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$ |

1. **Markov's inequality:** Let X be a discrete random variable taking non-negative values with a finite mean μ . Then,

$$P(X \geq c) \leq \frac{\mu}{c}$$

2. **Chebyshev's inequality:** Let X be a discrete random variable with a finite mean μ and a finite variance σ^2 . Then,

$$P(|X - \mu| \geq k\sigma) \leq \frac{1}{k^2}$$

3. **Weak Law of Large numbers:** Let $X_1, X_2, \dots, X_n \sim \text{iid } X$ with $E[X] = \mu, \text{Var}(X) = \sigma^2$.

Define sample mean $\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{n}$. Then,

$$P(|\bar{X} - \mu| > \delta) \leq \frac{\sigma^2}{n\delta^2}$$

4. **Using CLT to approximate probability:** Let $X_1, X_2, \dots, X_n \sim \text{iid } X$ with $E[X] = \mu, \text{Var}(X) = \sigma^2$.

Define $Y = X_1 + X_2 + \dots + X_n$. Then,

$$\frac{Y - n\mu}{\sqrt{n}\sigma} \approx \text{Normal}(0, 1).$$

5. **Bias of an estimator:** $\text{Bias}(\hat{\theta}, \theta) = E[\hat{\theta}] - \theta$.

6. **Method of moments:** Sample moments, $M_k(X_1, X_2, \dots, X_n) = \frac{1}{n} \sum_{i=1}^n X_i^k$

Procedure: For one parameter θ

- Sample moment: m_1
- Distribution moment: $E(X) = f(\theta)$
- Solve for θ from $f(\theta) = m_1$ in terms of m_1 .
- $\hat{\theta}$: replace m_1 by M_1 in the above solution.

7. **Likelihood of i.i.d. samples:** Likelihood of a sampling x_1, x_2, \dots, x_n , denoted

$$L(x_1, \dots, x_n) = \prod_{i=1}^n f_X(x_i; \theta_1, \theta_2, \dots)$$

8. **Maximum likelihood (ML) estimation:**

$$\theta_1^*, \theta_2^*, \dots = \arg \max_{\theta_1^*, \theta_2^*, \dots} \prod_{i=1}^n f_X(x_i; \theta_1, \theta_2, \dots)$$

9. **Bayesian estimation:** Let $X_1, \dots, X_n \sim \text{i.i.d. } X$, parameter Θ .

Prior distribution of Θ : $\Theta \sim f_\Theta(\theta)$.

Samples, S : $(X_1 = x_1, \dots, X_n = x_n)$

Posterior: $\Theta | (X_1 = x_1, \dots, X_n = x_n)$

Bayes' rule: Posterior \propto Prior \times Likelihood

Posterior density $\propto f_\Theta(\theta) \times P(X_1 = x_1, \dots, X_n = x_n | \Theta = \theta)$

10. **Normal samples with unknown mean and known variance:**

$X_1, \dots, X_n \sim \text{i.i.d. Normal}(M, \sigma^2)$.

Prior $M \sim \text{Normal}(\mu_0, \sigma_0^2)$.

Posterior mean: $\hat{\mu} = \bar{X} \left(\frac{n\sigma_0^2}{n\sigma_0^2 + \sigma^2} \right) + \mu_0 \left(\frac{\sigma^2}{n\sigma_0^2 + \sigma^2} \right)$

11. Hypothesis Testing

- Test for mean

Case (1): When population variance σ^2 is known (z -test)

| Test | H_0 | H_A | Test statistic | Rejection region |
|--------------|---------------|------------------|--|-------------------------|
| right-tailed | $\mu = \mu_0$ | $\mu > \mu_0$ | $T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$ | $\bar{X} > c$ |
| left-tailed | $\mu = \mu_0$ | $\mu < \mu_0$ | $T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$ | $\bar{X} < c$ |
| two-tailed | $\mu = \mu_0$ | $\mu \neq \mu_0$ | $T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$ | $ \bar{X} - \mu_0 > c$ |

Case (2): When population variance σ^2 is unknown (t -test)

| Test | H_0 | H_A | Test statistic | Rejection region |
|--------------|---------------|------------------|---|-------------------------|
| right-tailed | $\mu = \mu_0$ | $\mu > \mu_0$ | $T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$ | $\bar{X} > c$ |
| left-tailed | $\mu = \mu_0$ | $\mu < \mu_0$ | $T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$ | $\bar{X} < c$ |
| two-tailed | $\mu = \mu_0$ | $\mu \neq \mu_0$ | $T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$ | $ \bar{X} - \mu_0 > c$ |

- χ^2 -test for variance:

| Test | H_0 | H_A | Test statistic | Rejection region |
|--------------|---------------------|------------------------|---|---|
| right-tailed | $\sigma = \sigma_0$ | $\sigma > \sigma_0$ | $T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$ | $S^2 > c^2$ |
| left-tailed | $\sigma = \sigma_0$ | $\sigma < \sigma_0$ | $T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$ | $S^2 < c^2$ |
| two-tailed | $\sigma = \sigma_0$ | $\sigma \neq \sigma_0$ | $T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$ | $S^2 > c^2$ where $\frac{\alpha}{2} = P(S^2 > c^2)$ or $S^2 < c^2$ where $\frac{\alpha}{2} = P(S^2 < c^2)$ |

- Two samples z -test for means:

| Test | H_0 | H_A | Test statistic | Rejection region |
|--------------|-----------------|--------------------|---|---------------------------|
| right-tailed | $\mu_1 = \mu_2$ | $\mu_1 > \mu_2$ | $T = \bar{X} - \bar{Y}$ $\bar{X} - \bar{Y} \sim \text{Normal}\left(0, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}\right)$ if H_0 is true | $\bar{X} - \bar{Y} > c$ |
| left-tailed | $\mu_1 = \mu_2$ | $\mu_1 < \mu_2$ | $T = \bar{Y} - \bar{X}$ $\bar{Y} - \bar{X} \sim \text{Normal}\left(0, \frac{\sigma_2^2}{n_2} + \frac{\sigma_1^2}{n_1}\right)$ if H_0 is true | $\bar{Y} - \bar{X} > c$ |
| two-tailed | $\mu_1 = \mu_2$ | $\mu_1 \neq \mu_2$ | $T = \bar{X} - \bar{Y}$ $\bar{X} - \bar{Y} \sim \text{Normal}\left(0, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}\right)$ if H_0 is true | $ \bar{X} - \bar{Y} > c$ |

- Two samples F -test for variances

| Test | H_0 | H_A | Test statistic | Rejection region |
|------------|-----------------------|--------------------------|---|---|
| one-tailed | $\sigma_1 = \sigma_2$ | $\sigma_1 > \sigma_2$ | $T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$ | $\frac{S_1^2}{S_2^2} > 1 + c$ |
| one-tailed | $\sigma_1 = \sigma_2$ | $\sigma_1 < \sigma_2$ | $T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$ | $\frac{S_1^2}{S_2^2} < 1 - c$ |
| two-tailed | $\sigma_1 = \sigma_2$ | $\sigma_1 \neq \sigma_2$ | $T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$ | $\frac{S_1^2}{S_2^2} > 1 + c_R$ where $\frac{\alpha}{2} = P(T > 1 + c_R)$ or $\frac{S_1^2}{S_2^2} < 1 - c_L$ where $\frac{\alpha}{2} = P(T < 1 - c_L)$ |

Use the following values if required:

| |
|---------------------------------------|
| $F_Z(-2.33) = 0.01$ |
| $F_Z(2.33) = 0.99$ |
| $F_Z(-1.96) = 0.025$ |
| $F_Z(1.64) = 0.95$ |
| $F_Z(-1.75) = 0.04$ |
| $F_Z(-1.095) = 0.13786$ |
| $F_{\chi^2_{99}}^{-1}(0.05) = 77.046$ |
| $F_{\chi^2_{99}}^{-1}(0.95) = 123.22$ |
| $F_Z(1.095) = 0.86214$ |
| $F_Z(-0.036) = 0.48405$ |
| $F_Z(0.036) = 0.51595$ |
| $F_Z(-1.64) = 0.05$ |
| $F_Z(1.96) = 0.975$ |
| $F_Z(-1.88) = 0.03$ |
| $F_Z(-1.55) = 0.06057$ |

Table : Useful values

Options :

6406531174678. ✓ Useful Data has been mentioned above.

6406531174679. ❗ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065351150

Question Shuffling Allowed : Yes

Question Number : 175 Question Id : 640653354194 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Let $X_1, X_2, \dots, X_n \sim \text{i.i.d. Uniform}[-a, a]$, where a is unknown. An estimator \hat{a} for a is given as

$$\hat{a} = \frac{3}{n}(X_1^2 + X_2^2 + \dots + X_n^2)$$

Is \hat{a} an unbiased estimator of a ?

Options :

6406531174691. ✘ Yes

6406531174692. ✓ No

Sub-Section Number : 3

Sub-Section Id : 64065351151

Question Shuffling Allowed : Yes

Question Number : 176 Question Id : 640653354195 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider the null and alternative hypothesis $H_0 : \mu = 0, H_A : \mu > 0$. In which of the following cases can we reject the null hypothesis?

Options :

6406531174693. ✓ $P\text{-value} \leq \text{significance level } (\alpha)$.

6406531174694. ✘ $P\text{-value} > \text{significance level } (\alpha)$.

6406531174695. ✓ Test statistic (T) > critical value (c).

6406531174696. ✘ Test statistic (T) < critical value (c).

| | |
|-------------------------------------|-------------|
| Sub-Section Number : | 4 |
| Sub-Section Id : | 64065351152 |
| Question Shuffling Allowed : | Yes |

Question Number : 177 Question Id : 640653354205 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

The standard deviation of the length of bolts manufactured by a machine was 1 mm. A new machine with a supposedly lesser standard deviation is installed. A random sample of 100 bolts from the new machine showed a standard deviation of 0.5 mm. Based on this data, what is your conclusion at a significance level of 0.05, on the standard deviation of length of bolts manufactured by the new machine? Choose the correct options from the following (Select all that apply):

Options :

6406531174710. ✓ Null hypothesis, $H_0: \sigma = 1$

6406531174711. ✗ Null hypothesis, $H_0: \sigma = 0.5$.

6406531174712. ✗ Right tailed test is used.

6406531174713. ✓ Left tailed test is used.

6406531174714. ✗ Two tailed test is used.

6406531174715. ✗ F-test is used.

6406531174716. ✓ χ^2 -test is used.

6406531174717. ✘ Test Statistic used is Sample mean.

6406531174718. ✓ Test Statistic used is Sample variance.

6406531174719. ✘ Test Statistic used is population variance.

6406531174720. ✘ Accept H_0 at a significance level of 0.05.

6406531174721. ✓ Reject H_0 at a significance level of 0.05.

Sub-Section Number : 5

Sub-Section Id : 64065351153

Question Shuffling Allowed : Yes

Question Number : 178 Question Id : 640653354196 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

The average life of a battery is 4 years, with a standard deviation of 1 year. Assuming that the lives of the batteries follow approximately a normal distribution, find the probability that the mean life of a random sample of 30 such batteries falls between 3.8 and 4.2 years. Enter your answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.70 to 0.74

Sub-Section Number : 6

Sub-Section Id :

64065351154

Question Shuffling Allowed :

No

Question Id : 640653354187 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (179 to 180)

Question Label : Comprehension

Let $X_1, X_2, X_3 \sim f_{X_1 X_2 X_3}(t_1, t_2, t_3)$. The joint PMF is given in the following table:

| t_1 | t_2 | t_3 | $f_{X_1 X_2 X_3}(t_1, t_2, t_3)$ |
|-------|-------|-------|----------------------------------|
| 0 | 1 | 0 | 1/4 |
| 0 | 2 | 1 | 1/4 |
| 0 | 1 | 1 | 1/4 |
| 1 | 1 | 0 | 1/4 |

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 179 Question Id : 640653354188 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Choose the correct option(s) from the following (T_X refers to the values taken by a random variable X):

Options :

6406531174680. ❌ $T_{X_1} = T_{X_2} = T_{X_3} = \{0, 1, 2\}$.

6406531174681. ✓ $T_{X_1} = \{0, 1\}, T_{X_2} = \{1, 2\}, T_{X_3} = \{0, 1\}$.

6406531174682. ✓ Range of $(X_1 \mid X_2 = 1)$ is $\{0, 1\}$.

6406531174683. ❖ Range of $(X_2 \mid X_1 = 0, X_3 = 1)$ is $\{1\}$.

Question Number : 180 Question Id : 640653354189 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Calculate $P(X_1 = 0, X_2 = 1 \mid X_3 = 1)$.

Note: Enter the answer correct to one decimal place.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.5

Sub-Section Number : 7

Sub-Section Id : 64065351155

Question Shuffling Allowed : No

Question Id : 640653354190 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (181 to 183)

Question Label : Comprehension

Let the random variables X and Y have the following joint PDF:

$$f_{XY}(x, y) = \begin{cases} 4xy, & 0 < x, y < 1 \\ 0, & \text{otherwise} \end{cases}$$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 181 Question Id : 640653354191 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Find the marginal distribution of Y .

Options :

6406531174685. ❌ $f_Y(y) = \begin{cases} 2y, & 0 < y < 1 \\ 0, & \text{otherwise} \end{cases}$

6406531174686. ❌ $f_Y(y) = \begin{cases} 2x, & 0 < x < 1 \\ 0, & \text{otherwise} \end{cases}$

6406531174687. ✓ $f_Y(y) = \begin{cases} 2y, & 0 < y < 1 \\ 0, & \text{otherwise} \end{cases}$

6406531174688. ❌ $f_Y(y) = \begin{cases} 2x, & 0 < y < 1 \\ 0, & \text{otherwise} \end{cases}$

Question Number : 182 Question Id : 640653354192 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Compute $E[Y]$.

Note: Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.65 to 0.68

Question Number : 183 **Question Id :** 640653354193 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

Compute $E[Y | X = 0.5]$.

Note: Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.65 to 0.68

Question Id : 640653354206 **Question Type :** COMPREHENSION **Sub Question Shuffling**

Allowed : No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A

Think Time : N.A **Minimum Instruction Time :** 0

Question Numbers : (184 to 185)

Question Label : Comprehension

Suppose the number of deceased people in a week because of a deadly disease in a country has the Poisson(λ) distribution. A researcher wants to estimate λ . From studies in other countries, prior mean should be 3, and the prior standard deviation 1. He decides to use the Gamma(a, β) prior

that matches his prior mean and standard deviation. The number of deceased people recorded over the next 10 weeks are: 3, 5, 7, 0, 1, 7, 4, 9, 6, 4.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 184 Question Id : 640653354207 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Find the value of α and β .

Options :

6406531174722. ✘ $\alpha = 3, \beta = 3$

6406531174723. ✘ $\alpha = 9, \beta = 9$

6406531174724. ✘ $\alpha = 3, \beta = 9$

6406531174725. ✓ $\alpha = 9, \beta = 3$

Question Number : 185 Question Id : 640653354208 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

Find the posterior mean of λ for the given sample. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

4.21 to 4.25

Sub-Section Number :

Sub-Section Id :

64065351156

Question Shuffling Allowed :

No

Question Id : 640653354197 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (186 to 188)

Question Label : Comprehension

The time (in minutes) required to repair electronic gadgets by an electrician is an exponential random variable with unknown parameter λ . Consider a sample (in minutes) 10, 11, 25, 1, 4, 5, 8, 35, 14, 15 from his previous repairing time.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 186 Question Id : 640653354198 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the method of moments estimate of λ for the given sample. (Enter the answer correct to three decimal places.)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.070 to 0.085

Question Number : 187 Question Id : 640653354199 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the maximum likelihood estimate of λ for the given sample. (Enter the answer correct to three decimal places.)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.070 to 0.085

Question Number : 188 Question Id : 640653354200 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Using a Uniform[0,1] prior, find the posterior mean of the given sample. (Enter the answer correct to three decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.080 to 0.090

Question Id : 640653354201 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (189 to 191)

Question Label : Comprehension

Suppose a principal states that the students studying in her school have an average IQ score equal to 98.5. A reporter suspects that the average may be lower, possibly 98 and took a sample of 100 random students from the school and observed the average IQ score to be 98.29. Assume the IQ scores of the students are normally distributed with standard deviation 1.2.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 189 Question Id : 640653354202 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Define null hypothesis and alternative hypothesis.

Options :

6406531174701. ❌ $H_0: \mu = 98.5, H_A: \mu \neq 98.5$

6406531174702. ❌ $H_0: \mu = 98.5, H_A: \mu > 98.5$

6406531174703. ✓ $H_0: \mu = 98.5, H_A: \mu < 98.5$

6406531174704. ❌ $H_0: \mu \neq 98.5, H_A: \mu = 98.5$

Question Number : 190 Question Id : 640653354203 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the P -value. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.04

Question Number : 191 Question Id : 640653354204 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Choose the set of correct options.

Options :

6406531174706. ✓ Reject H_0 at significance level $\alpha = 0.05$.

6406531174707. ✓ Accept H_0 at significance level $\alpha = 0.01$.

6406531174708. ✗ Accept H_0 at significance level $\alpha = 0.05$.

6406531174709. ✗ Reject H_0 at significance level $\alpha = 0.01$.

Sub-Section Number : 9

Sub-Section Id : 64065351157

Question Shuffling Allowed : No

Question Id : 640653354209 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (192 to 193)

Question Label : Comprehension

Answer the given subquestions.

Sub questions

Question Number : 192 Question Id : 640653354210 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Suppose X_1, X_2, \dots, X_{15} is an i.i.d sample from a distribution $\text{Normal}(\mu_1, 4^2)$. Suppose Y_1, Y_2, \dots, Y_{15} is an i.i.d sample from a distribution $\text{Normal}(\mu_2, 3^2)$. Let \bar{X} and \bar{Y} be 40 and 43, respectively. Suppose we want to check if the distribution means are different. Find the P - value of the test. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.015 to 0.025

Question Number : 193 Question Id : 640653354211 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 0

Question Label : Multiple Select Question

Select the steps from the following options, that you will use for finding the P - value in the previous question.

Note: This question is optional. We will check your answer to this question if you make a mistake in the previous one.

Options :

6406531174728. ✓ Null hypothesis, $H_0 : \mu_1 = \mu_2$.

6406531174729. ✘ Null hypothesis, $H_0 : \mu_1 \neq \mu_2$.

6406531174730. ✘ Right tailed test is used.

6406531174731. ✘ Left tailed test is used.

6406531174732. ✓ Two tailed test is used.

6406531174733. ✘ t -test is used.

6406531174734. ✓ z -test is used.

6406531174735. ✓ $\bar{Y} - \bar{X} \sim \text{Normal} \left(\mu_2 - \mu_1, \frac{16}{15} + \frac{9}{15} \right)$

6406531174736. ✘ $\bar{Y} - \bar{X} \sim \text{Normal} (\mu_2 - \mu_1, 25)$

6406531174737. ✘ $\bar{Y} - \bar{X} \sim \text{Normal} \left(0, \frac{16}{15} + \frac{9}{15} \right)$

6406531174738. ✘ Test: Reject H_0 , if $|\bar{Y} - \bar{X}| < c$.

6406531174739. ✓ Test: Reject H_0 , if $|\bar{Y} - \bar{X}| > c$.

App dev1

| | |
|---|-------------|
| Section Id : | 64065322250 |
| Section Number : | 6 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 31 |
| Number of Questions to be attempted : | 31 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351158 |
| Question Shuffling Allowed : | No |

Question Number : 194 Question Id : 640653354212 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: MODERN APPLICATION DEVELOPMENT 1"

**ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.**

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174740. ✓ Yes

6406531174741. ✘ No

Sub-Section Number : 2

Sub-Section Id : 64065351159

Question Shuffling Allowed : Yes

Question Number : 195 Question Id : 640653354213 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following correctly represents the components of the given URL?

`https://www.mywebsite.com/home?user=Mad1&key=madcs2003`

Options :

`https` : Domain name;
`www.mywebsite.com` : Request parameter;
`/home` : Directory;
`user=Mad1&key=madcs2003` : domain name

6406531174742. ✘

`https` : Protocol;
`www.mywebsite.com` : Directory;
`/home` : Domain name;
`user=Mad1&key=madcs2003` : Request parameters

6406531174743. ✘

`https` : Protocol;
`www.mywebsite.com` : Domain name;
`/home` : Directory;
`user=Mad1&key=madcs2003` : Request parameters

6406531174744. ✓

`https` : IP Address;
`www.mywebsite.com` : Domain name;
`/home` : Directory;
`user=Mad1&key=madcs2003` : Local Host

6406531174745. ✘

Question Number : 196 Question Id : 640653354215 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following flask app and an HTML file in templates folder:

Python file: app.py

```
from flask import Flask, render_template
app = Flask(__name__)

my_list = ['Web development', 'onlinedegree', 'cs2003',
           'MAD-I', 'Data_science']

@app.route('/')
def render():
    return render_template('index.html', my_list = my_list)

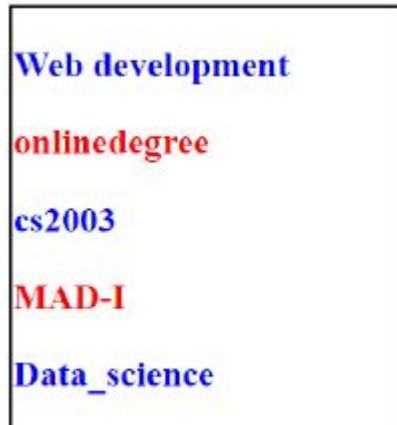
app.run(debug = True)
```

Template file:

```
<!DOCTYPE html>
<head>
    <style>
        body{width: 200px;
              border: 2px solid black}
        #one{color:red;}
        #two{color:blue;}
    </style>
</head>
<body>
    {% for item in my_list %}
        {% set Length = item|length %}
        {% if Length%2 == 0 %}
            <h3 id = "one">{{ item }}</h3>
        {% else %}
            <h3 id = "two">{{ item }}</h3>
        {% endif %}
    {% endfor %}
</body>
```

If the above flask app is running locally on <http://127.0.0.1:5000/>, what will be rendered by the browser for the base URL?

Options :



6406531174750. *

6406531174751. *

Web development

onlinedegree

cs2003

MAD-I

Data_science

Web development

onlinedegree

cs2003

MAD-I

Data_science

6406531174752. *

Web development

onlinedegree

cs2003

MAD-I

Data_science

6406531174753. ✓

Question Number : 197 Question Id : 640653354231 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the flask code given below.

Python file: app.py

```
from flask import Flask, jsonify, request

app = Flask(__name__)

my_shops= [
    {
        'name of the shop' : 'Grocery',
        'items' : [
            {
                'item1' : 'Toothpaste',
                'item2' : 'Snacks',
                'item3' : 'Biscuits',
                'item4' : 'Soaps'
            }
        ]
    }
]

@app.route('/')
def show_shop():
    return jsonify({"shops" : my_shops})

=====
CODE HERE
=====

if __name__ == '__main__':
    app.run()
```

Which of the following code snippets must be added in the given space of above application, in order to create a new shop in 'my_shops' list on the server side apart from the existing one?

Options :

```
@app.route('/myshop')
def create_shop():
    new_data = request.get_json()
    new_shop = [
        {
            'New shop' : new_data['name of the shop']
        }
    ]
    my_shops[new_shop]
    return jsonify(new_shop)
```

6406531174803. *

```

@app.route('/myshop', methods=['POST'])
def create_shop():
    new_data = request.get_json()
    new_shop = {
        'New shop' : new_data['name of the shop']
    }
    my_shops.append(new_shop)
    return jsonify(new_shop)

```

6406531174804. ✓

```

@app.route('/myshop', methods=['POST'])
def create_shop():
    new_data = request.get_json()
    new_shop = {
        'New shop' : new_data['name of the shop']
    }
    return jsonify(new_shop)

```

6406531174805. ✗

6406531174806. ✗ All of these

Question Number : 198 Question Id : 640653354234 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A table ‘person’ is created in the database using model class “Person” with fields and their properties given in the table below.

| id | firstname | lastname | email | age | occupation |
|-----------|------------------|-----------------|-------------------|------------|-------------------|
| 1 | Rahul | Mishra | rahul@gmail.com | 23 | Engineer |
| 2 | Ishan | Vadhera | vadhera@gmail.com | 35 | Lawyer |
| 3 | Abhilasha | Verma | vermaa@gmail.com | 25 | Teacher |

Assuming that `flask_sqlalchemy` is to be used in the ‘main.py’ file, which of the following statements is/are true?

Options :

Both the queries i.e.,

`Person.query.filter_by(firstname="Ishan").all()` and

`Person.query.filter_by(firstname="Ishan").first()` will produce the same result.

6406531174815. ❌

Both the queries i.e.,

`Person.query.filter_by(id=3).first()` and

6406531174816. ✓

`Person.query.get(3)` will produce the same result.

If `person1 = Person.query.get(1)` then, Both the inputs i.e.,

`>>>person1`

`>>>person1.firstname` will produce the same result.

6406531174817. ❌

Both the queries i.e.,

`Person.query.filter_by(firstname="Ishan").first()`, and

`Person.query.get(3)`

6406531174818. ❌

will produce the same result

Question Number : 199 Question Id : 640653354235 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A flask app and a template files are given below.

Python file: app.py

```
from flask import Flask, render_template
app = Flask(__name__)

@app.route('/home')
def HomePage():
    return "Welcome, folks! This is the Home Page!"

@app.route('/about')
def AboutPage():
    users = [
        {"user": "Shobhit", "gender": "Male", "age": 23, "score": 90},
        {"user": "Deepak", "gender": "Male", "age": 17, "score": 88},
        {"user": "Nikita", "gender": "Female", "age": 20, "score": 87}
    ]
    return render_template('home.html', condition=True, users=users)

if __name__ == "__main__":
    app.run(debug=True)
```

Templates file: home.html

```
<!DOCTYPE html>
<html>
<body>
    <p><a href="{{ url_for('HomePage') }}>Go back to home page?</a></p>
    <h2>About page</h2>
    {% if condition %}
        <h3> You are landed on about page.</h3>
        {% for user in users %}
            <ul>
                <li>Username : {{user.user}}, Age : {{user.age}}, Gender :
                    {{user.gender}}, Score : {{user.score}}</li>
            </ul>
        {% endfor %}
    {% else %}
        <h3> Please Go back.</h3>
    {% endif %}
</body>
</html>
```

If the above flask application is running locally on “<http://127.0.0.1:5000>”, which of the following statement is true?

Options :

For URL: “<http://127.0.0.1:5000/home/>”, the rendered output will be "Welcome, 6406531174819. ✘ folks! This is the Home Page!"

6406531174820. ✓

For URL: "http://127.0.0.1:5000/about", the rendered output will be:

[Go back to home page?](#)

About page

You are landed on about page.

- Username : Shobhit, Age : 23, Gender : Male, Score : 90
- Username : Deepak, Age : 17, Gender : Male, Score : 88
- Username : Nikita, Age : 20, Gender : Female, Score : 87

For URL: "http://127.0.0.1:5000/about", the rendered output will be:

[Go back to home page?](#)

About page

You are landed on about page.

- Username : Shobhit
- Age : 23
- Gender : Male
- Score : 90
- Username : Deepak
- Age : 17
- Gender : Male
- Score : 88
- Username : Nikita
- Age : 20
- Gender : Female
- Score : 87

6406531174821. ✶

6406531174822. ✶

For URL: "http://127.0.0.1:5000/about", the rendered output will be:

[Go back to home page?](#)

About page

You are landed on about page.

Username : Shobhit

Age : 23

Gender : Male

Score : 90

Username : Deepak

Age : 17

Gender : Male

Score : 88

Username : Nikita

Age : 20

Gender : Female

Score : 87

Question Number : 200 Question Id : 640653354237 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

An HTML document is given below.

```

<!DOCTYPE html>
<html>
<body>
    <h1 id="id1">Welcome to IITM</h1>
    <h3 class="class1">Welcome to the world's first online degree
        program.</h3>
    <a href="">Go back to main link</a>
    <p class="class1">Lorem ipsum dolor sit amet consectetur
        adipisicing elit. Earum, rerum?</p>
    <p class="class1">Have you enrolled in BSC in Data science
        and Programming? </p>
    <p id="id2">Go to the IITM online degree website and enroll
        now!</p>
</body>
</html>

```

Suppose, if we want to give red color to the text within the heading element having id="id1" and green color to the text within the heading element having class="class1", what will be the correct way to do that?

Options :

By using external CSS as follows:

```

#id1{
    color:green;
}
h3.class1{
    color:red;
}

```

6406531174827. ✘

By using internal CSS as follows:

```

<style>
    .id1{
        color:red;
    }
    p.class1{
        color:green;
    }
</style>

```

6406531174828. ✘

6406531174829. ✓

By using inline CSS as follows:

```
<h1 id="id1" style="color:red;">Welcome to IITM</h1>
<h3 class="class1" style="color:green;">Welcome to the world's
first online degree program.</h3>
```

6406531174830. ✘ All of these

Question Number : 201 Question Id : 640653354242 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

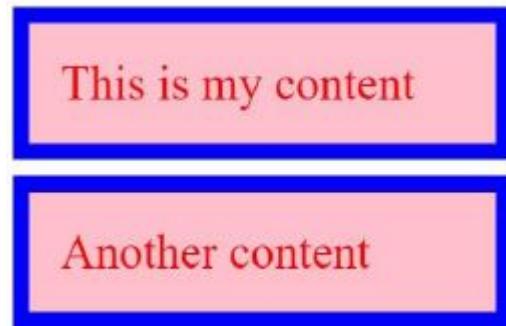
Question Label : Multiple Choice Question

Consider the following HTML document with internal CSS.

```
<!DOCTYPE html>
<html>
  <head>
    <style type="text/css">
      *{
        margin: 0px;
        width: 253px;
      }
      div{
        margin: 10px;
        padding: 20px;
        border-style: dotted;
        border-width: 10px;
        font-size: 30px;
        color: blue;
        background-color: pink;
        border-color: red;
      }
    </style>
    <title>End Sem</title>
  </head>
  <body>
    <div>This is my content</div>
    <div>Another content</div>
  </body>
</html>
```

How will the browser render the above HTML document?

Options :



6406531174847. *

6406531174848. *

This is my content

Another content

This is my content
Another content

6406531174849. *

This is my content
Another content

6406531174850. ✓

Sub-Section Number :

3

Sub-Section Id :

64065351160

Question Shuffling Allowed :

Yes

Question Number : 202 Question Id : 640653354216 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider the following table “workers” created in SQLite database corresponding to model class “Workers” using flask_sqlalchemy.

| Id | Name | Designation | Gender | Salary |
|--------|---------------|-------------|--------|--------|
| Filter | Filter | Filter | Filter | Filter |
| 1 | Padma Raja | Supervisor | Female | 2000 |
| 2 | Sameer Gandhi | Labour | Male | 1200 |
| 3 | Latika Murthy | Labour | Female | 800 |
| 4 | Nitya Grover | Supervisor | Female | 2000 |
| 5 | Amit Saxena | Supervisor | Male | 2000 |

The correct way to increase the salary of all the female workers by 500 Rupees using the Python console is:

Options :

```
>>> workers = Workers.query.filter_by(Designation = 'Supervisor').all()
>>> for worker in workers:
...     worker.Salary += 500
...
>>> db.session.commit()
```

6406531174754. ❌

```
>>> workers = Workers.query.filter_by(Gender = 'Female').all()
>>> workers.Salary += 500
>>> db.session.commit()
```

6406531174755. ❌

```
>>> workers = Workers.query.filter_by(Gender = 'Female').all()
>>> for worker in workers:
...     worker.Salary += 500
...
>>> db.session.commit()
```

6406531174756. ✓

```
>>> workers = Workers.query.filter(Workers.Gender.like('F%')).all()
>>> for worker in workers:
...     worker.Salary += 500
...
>>> db.session.commit()
```

6406531174757. ✓

Sub-Section Id :

64065351161

Question Shuffling Allowed :

Yes

Question Number : 203 Question Id : 640653354214 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

How will the browser render the output of the following Python code snippet?

```
from jinja2 import Template

styles=[  
    '.text{color: purple}\n #heading{color:red}\n #subhead{color:blue}',  
    '.text{color: purple}\n #subhead{color:green}\n #main{color:blue}',  
    '.text{color: purple}\n #main{color:red}\n #heading{color:blue}'  
]  
  
template = """  
    <!DOCTYPE html>  
    <style>  
        div{border: 2px solid black;  
             width: 300px;  
             background-color: rgb(247, 247, 230)}  
        {{styles[0]}}  
    </style>  
    <body>  
        <div>  
            <h2 style="color:brown;" class="text" id="heading">  
Programming Degree</h2>  
            <h3 class="text" id="subhead">Modern Application 1</h3>  
            <p class="text" id="main">This is a course on Application  
Development</p>  
        </div>  
    </body>  
"""  
  
test_render = Template(template)  
output = test_render.render(styles = styles)  
print(output)
```

Options :

Programming Degree

Modern Application 1

This is a course on Application Development

6406531174746. *

Programming Degree

Modern Application 1

This is a course on Application Development

6406531174747. *

Programming Degree

Modern Application 1

This is a course on Application Development

6406531174748. *

Programming Degree

Modern Application 1

This is a course on Application Development

6406531174749. ✓

Question Number : 204 Question Id : 640653354220 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

What will be the output of the following python code if method test_request_context() allows flask app to print statements on the terminal?

```
from flask import Flask, url_for

app = Flask(__name__)

@app.route('/')
def home():
    return 'base url'

@app.route('/subscribe')
def subscribe():
    return 'Please subscribe to this page.'

@app.route('/new_course/<coursename>')
def course(coursename):
    return f'The course {coursename} gives basics of web development.'

with app.test_request_context():
    print(url_for('home'))
    print(url_for('subscribe'))
    print(url_for('subscribe', username = 'user_one'))
    print(url_for('course', coursename = 'MAD_I'))
```

Options :

base url
Please subscribe to this page
Please subscribe to this page user one.
The course MAD_I gives basics of web development.

6406531174766. ❌

/
/subscribe
/subscribe/user_one
6406531174767. ❌ /new_course/MAD_I

/
/subscribe
/subscribe?username=user_one
/new_course/MAD_I

6406531174768. ✓

```
/  
/subscribe  
/subscribe?username=user_one  
/new_course?coursename=MAD_I
```

6406531174769. ❌

Question Number : 205 Question Id : 640653354228 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

An internet connection with certain bandwidth is able to serve 10,000 requests of 150 Kilobytes each. What should be the increase in bandwidth (in Gbps) if this internet connection is to handle 12,500 requests of 180 Kilobytes each? (**Use relations:** 1 Byte = 8 bits, 1 MB = 1000 B, 1 GB = 1000 M and so on)

Options :

6406531174791. ❌ 600

6406531174792. ✓ 6

6406531174793. ❌ 0.6

6406531174794. ❌ 12

Question Number : 206 Question Id : 640653354229 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the code snippet given below.

Python file: test_app.py

```
import pytest

@pytest.fixture
def items():
    return "Books"

@pytest.fixture
def order():
    return "Pens"

@pytest.fixture
def order_items(order, items):
    return [order, items]

@pytest.fixture
def expected_list():
    return ["Books", "Pencils", "Pens"]

def test_1(order_items, expected_list):
    order_items.append("Pencils")
    assert order_items == expected_list

def test_2(order_items):
    order_items.append("Pencils")
    assert order_items == ["Pens", "Books", "Pencils"]
```

Which of the following statement is true about the above code snippet?

Options :

6406531174795. ✓ After running pytest, test_1 will fail, whereas test_2 will pass.

6406531174796. ✗ After running pytest, test_2 will fail, whereas test_1 will pass.

6406531174797. ✗ Both the test cases, test_1 and test_2 will pass successfully.

6406531174798. ✗ Both the test cases, test_1 and test_2 will fail.

Question Number : 207 Question Id : 640653354232 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the Python code snippet given below.

Python file: app.py

```
from flask import Flask, request
from flask_restful import Api, Resource, reqparse

app = Flask(__name__)
api = Api(app)

class Add(Resource):
    def post(self):
        data_args = reqparse.RequestParser()
        data_args.add_argument('Name', help='Name is required',
        required =True)
        data_args.add_argument('Age', help='Age is required',
        required =True)
        args = data_args.parse_args()
        return { "Your Name": args['Name'], "Your Age" : args['Age']}

api.add_resource(Add, '/add')

if __name__ == '__main__':
    app.run(debug=True)
```

If this flask application is running on <http://127.0.0.1:5000>, which of the following is the correct output when a POST request is sent to URL "<http://127.0.0.1:5000/add>"?

Options :

6406531174807. ✘ The server will throw a “405 METHOD NOT ALLOWED” error.

6406531174808. ✘ The server will throw a “404 NOT FOUND” error.

For the request body;

```
{  
    "Name" : "Rahul",  
    "Age": 23  
}
```

The application will return;

```
{  
    "Your Name": "Rahul",  
    "Your Age": "23"  
}
```

6406531174809. ✓

6406531174810. ✘ None of these

Question Number : 208 Question Id : 640653354233 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the Python code given below.

```
import pytest

@pytest.fixture
def first_entry():
    return "Apple"

@pytest.fixture
def order(first_entry):
    return [first_entry]

def test_string(order):
    order.append("Kiwi")
    assert order == ["Banana", "Apple"]

def test_int(order):
    order.append("Banana")
    assert order == ["Banana", "Apple", "Kiwi"]
```

Which of the following statement is true?

Options :

6406531174811. ✘ After running pytest, both test cases will pass successfully.

6406531174812. ✘ After running pytest, the first test case will fail, whereas the second test case will pass.

6406531174813. ✓ After running pytest, both test cases will show a failure report.

6406531174814. ✘ None of these

Question Number : 209 Question Id : 640653354236 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the flask app given below.

```
from flask import Flask, abort
from flask_restful import Resource, Api
app = Flask(__name__)
api = Api(app)

item_list=[{"item1": "Cloths"},  
          {"item2" : "Shoes"},  
          {"item3" : "Sunglasses"}]

class ItemList(Resource):  
    def get(self, item_no, item_name):  
        this_item = {'item'+item_no : item_name}  
        if this_item in item_list:  
            return item_list, 200  
        else:  
            abort('400')  
  
    def post(self, item_no, item_name):  
        my_item = {'item'+item_no : item_name}  
        item_list.append(my_item)  
        return my_item, 201  
  
api.add_resource(ItemList, '/items/<item_no>/<item_name>')
app.run(debug=True)
```

If the above flask application is running locally on “<http://127.0.0.1:5000>”, what will be the output of a GET request sent to the URL: ‘<http://127.0.0.1:5000/items/4/watch>’ just after a POST request that is sent on the same URL?

Options :

6406531174823. ✖ The server will show a “404 NOT FOUND” error.

{
 "item4": "watch"
}

6406531174824. ✖ }

```
[  
  {  
    "item1": "Cloths"  
  },  
  {  
    "item2": "Shoes"  
  },  
  {  
    "item3": "Sunglasses"  
  },  
  {  
    "item4": "watch"  
  }]
```

6406531174825. ✓]

6406531174826. ✘ None of these

Question Number : 210 Question Id : 640653354241 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following flask application.

```

from flask import Flask, render_template

app=Flask(__name__)

@app.route('/')
def home():
    my_items = ['Cake', 'Apple', 'Ice Cream', 'DarkChocolate',
'Donut', 'Grape']
    l1 = []
    for i in range(len(my_items)):
        if i>2:
            l1.append(my_items[i])

    return render_template('index.html', list=l1)

app.run(debug=True)

```

Template File - index.html

```

{% macro display(list) %}
    {% for item in list %}
        <p>{{ item }}</p>
    {% endfor %}
{% endmacro %}
<html>
    <body>
        {{ display(list) }}
    </body>
</html>

```

suppose the application is running locally on the 'http://127.0.0.1:5000', then what will be rendered by the browser?

Options :

6406531174843. ❌ Cake

Apple

Ice Cream

6406531174844. ❌ Cake

Apple

Ice Cream

DarkChocolate

Donut

Grape

6406531174845. ✓ DarkChocolate

Donut

Grape

6406531174846. ✗ Ice Cream

DarkChocolate

Donut

Grape

Question Number : 211 Question Id : 640653354244 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Python code snippets.

File 1: main.py

```
import sys
from new import fun
a = sys.argv[1]
b = sys.argv[2]
c = sys.argv[3]
result = fun(a, b, c)
print(result + " is greater")
```

File 2: new.py

```
def fun(num1,num2,num3):
    if (num1 > num2) and (num1 > num3):
        return num1
    elif (num2 > num1) and (num2 > num3):
        return num2
    else:
        return num3
```

suppose the main.py file is executed in the terminal. What will be the output?

```
python main.py
python main.py 8 10 5
```

Options :

6406531174855. ❌ IndexError: list index out of range

NameError: name 'fun' is not defined

6406531174856. ❌ 3 is greater

NameError: name 'fun' is not defined

6406531174857. ✓ IndexError: list index out of range

10 is greater

6406531174858. ❌ NameError: name 'fun' is not defined

8 is greater

Question Number : 212 Question Id : 640653354246 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a server that has an Intel i5 processor, 64 GB RAM, 1 TB Hard disk with 3 Gbps network connection. If a client accesses a web page, it requires 1.5 MB. Calculate the maximum number of

such requests per second the server can handle. (**Use relations:** 1 Byte = 8 bits, 1 MB = 1000 B, 1 GB = 1000 M and so on).

Options :

6406531174863. ✘ 25

6406531174864. ✘ 32

6406531174865. ✓ 250

6406531174866. ✘ 200

Sub-Section Number : 5

Sub-Section Id : 64065351162

Question Shuffling Allowed : Yes

Question Number : 213 Question Id : 640653354221 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider the following Python code snippet.

```

from flask import Flask, abort, redirect, url_for, render_template

app = Flask(__name__)

weekday_users = ['user_1', 'user_3', 'user_4', 'user_6', 'user_7']
weekend_users = ['user_2', 'user_5']

@app.route('/weekday/<username>')
def user_weekday(username):
    if username in weekday_users:
        return redirect(url_for('login', username = username))
    else:
        abort(401)

@app.route('/weekend/<username>')
def user_weekend(username):
    if username in weekend_users:
        return redirect(url_for('login', username = username))
    else:
        abort(401)

@app.route('/login/<username>')
def login(username):
    return f"<h2>Correct User Found! {username}</h2>"

@app.errorhandler(401)
def page_not_found(error):
    return "<h2>You are not authorized for this day.</h2>", 401

app.run()

```

If the above flask app is running locally on “<http://127.0.0.1:5000>”, Which of the following statements is/are correct?

Options :

For the URL, “http://localhost:5000/weekday/user_4”, the browser will render:
✓ **Correct User Found! user_4**
6406531174770.

For the URL, “http://localhost:5000/weekend/user_3”, the browser will render:
* **Correct User Found! user_3**
6406531174771.

For the URL, “http://localhost:5000/weekday/user_5”, the browser will render:
✓ **You are not authorized for this day.**
6406531174772.

For the URL, "http://localhost:5000/weekend/user_2", the browser will render:
6406531174773. ✖ **You are not authorized for this day.**

Question Number : 214 Question Id : 640653354238 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider the code given below.

```

from flask import Flask, request
from flask_restful import Api, Resource, reqparse

app = Flask(__name__)

api = Api(app)

Mytasks = {
    1: {"mytask": "Studying"}, 
    2: {"mytask": "Exercise"}, 
    3: {"mytask": "Eating"}, 
    4: {"mytask": "Sleeping"}
}

class Display(Resource):
    def get(self):
        return Mytasks

class DisplayAll(Resource):
    def get(self, MytaskList_id):
        return Mytasks[MytaskList_id]

    def post(self, MytaskList_id):
        data_args = reqparse.RequestParser()
        data_args.add_argument("mytask", help='This is required field', required=True)
        args = data_args.parse_args()
        Mytasks[MytaskList_id] = {"mytask" : args["mytask"]}
        return Mytasks[MytaskList_id]

api.add_resource(Display, '/mytask')
api.add_resource(DisplayAll, '/task/<int:MytaskList_id>')

if __name__ == '__main__':
    app.run(debug=True)

```

If the above flask application is running locally on "<http://127.0.0.1:5000>", which of the following statements is/are true?

Options :

The status code that we get after sending a POST request to the URL: <http://127.0.0.1:5000/mytask/4> will be "404 NOT FOUND".

6406531174831. ✓

6406531174832. ✓

The response that we get after sending a GET request to the URL:<http://127.0.0.1:5000/mytask>" will be:

```
{  
    "1": {  
        "mytask": "Studying"  
    },  
    "2": {  
        "mytask": "Exercise"  
    },  
    "3": {  
        "mytask": "Eating"  
    },  
    "4": {  
        "mytask": "Sleeping"  
    }  
}
```

The response that we get after sending POST request to the URL:<http://127.0.0.1:5000/task/4>" with a sending a request body as,

```
{  
    "mytask" : "Swimming"  
}  
will be :  
{  
    "mytask" : "Swimming"  
}
```

6406531174833. ✓

6406531174834. ✘

The response that we get after sending a GET request to the URL: "<http://127.0.0.1:5000/mytask>" will be:

```
{  
    "1": {  
        "mytask": "Studying"  
    },  
    "2": {  
        "mytask": "Exercise"  
    },  
    "3": {  
        "mytask": "Eating"  
    },  
    "4": {  
        "mytask": "Sleeping"  
    },  
    "4": {  
        "mytask": "Swimming"  
    }  
}
```

Sub-Section Number : 6

Sub-Section Id : 64065351163

Question Shuffling Allowed : Yes

Question Number : 215 Question Id : 640653354225 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Short Answer Question

What will be the decimal representation of binary number 010101100000011_2 ?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

11011

Sub-Section Number :

7

Sub-Section Id :

64065351164

Question Shuffling Allowed :

Yes

Question Number : 216 Question Id : 640653354226 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

A machine takes a minimum of 100 seconds to sort 500 entries in a database. What will be the approximate minimum time taken by the machine to sort 1200 entries if the sorting method employs an algorithm with time complexity of $O(n\log(n))$. Where “n” is the number of entries?

Options :

6406531174783. ❌ 173 seconds

6406531174784. ✓ 273 seconds

6406531174785. ❌ 373 seconds

6406531174786. ❌ 473 seconds

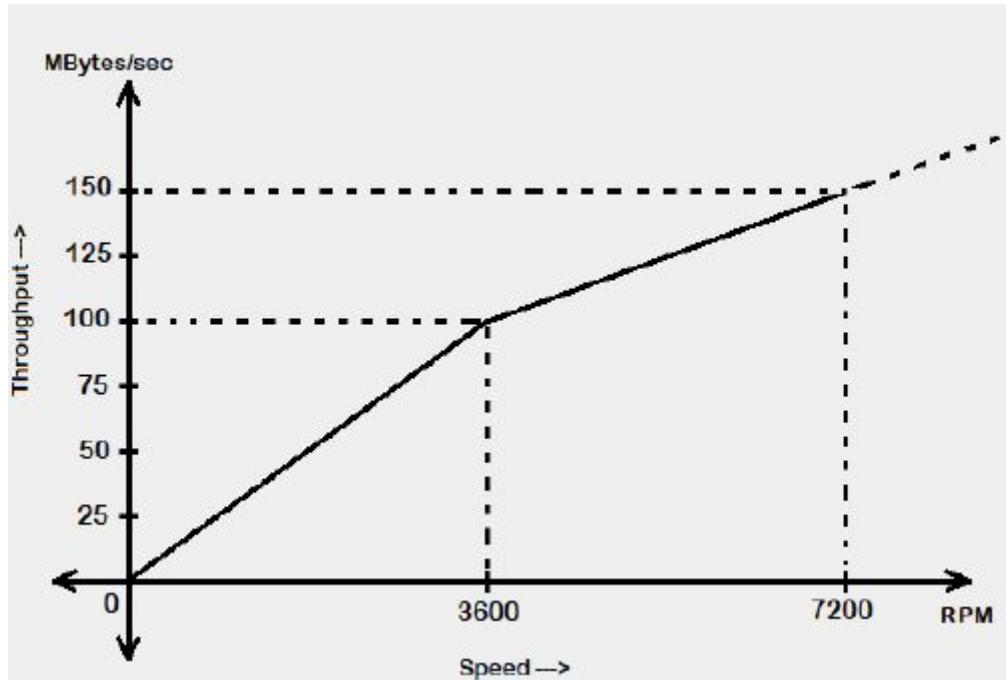
Question Number : 217 Question Id : 640653354227 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

The speed vs. throughput characteristics of a typical HDD is shown in the figure below. If this HDD is to be used as a replacement of an SSD whose read/write speed is 450 MB/s. At what speed (in RPM) should the disk of HDD rotate with to deliver the same performance as that of the SSD?



Options :

6406531174787. ✘ 3600 RPM

6406531174788. ✘ 7200 RPM

6406531174789. ✘ 16,200 RPM

6406531174790. ✓ 28,800 RPM

Question Number : 218 Question Id : 640653354239 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Flask app and an HTML file.

Flask app: app.py

```
from flask import Flask, render_template, request
app = Flask(__name__)
users = {
    '3':{'name': 'Ram', 'Designation': 'Teacher'},
    '2':{'name': 'Dilip', 'Designation': 'student'},
    '5':{'name': 'Sonu', 'Designation': 'computer operator'},
    '1':{'name': 'Guru', 'Designation': 'clerk'}
}
@app.route('/')
def country():
    id = request.args.get('id')
    authenticated_users_id = [3, 2, 5]
    user = users.get(id)
    name = user.get('name') if user is not None else None
    Designation = user.get('Designation') if user is not None else
None
    user = {'is_authenticated': False, 'name': name, 'Designation':
Designation}
    if int(id) in authenticated_users_id:
        user['is_authenticated'] = True
        return render_template('index.html', data = user)
    if int(id) not in authenticated_users_id:
        user['is_authenticated'] = False
        return render_template('index.html', data = user)

app.run(debug = True)
```

HTML File: index.html

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Document</title>
  </head>
  <body>
    {% if data.name == None %}
      User not found
    {% elif data.is_authenticated == True %}
      Hello {{data.name}} you can enter into this site:
    {{data.Designation}}
    {% else %}
      Hello {{data.name}} you have no access to this site:
    {{data.Designation}}
    {% endif %}
  </body>
</html>
```

Suppose the application is running locally on the 'http://127.0.0.1:5000', then what will be rendered by the browser for 'http://127.0.0.1:5000/?id=5', http://127.0.0.1:5000/?id=1' and 'http://127.0.0.1:5000/?id=4' respectively?

Options :

6406531174835. ✓ Hello Sonu you can enter into this site: computer operator
Hello Guru you have no access to this site: clerk

User not found

6406531174836. ✖ Hello Ram you can enter into this site: Teacher

Hello Guru you have no access to this site: Student

Hello Sonu you can enter into this site: computer operator

6406531174837. ✖ User not found

Hello Dilip you have no access to this site: Student

Hello Sonu you can enter into this site: computer operator

6406531174838. ✖ Hello Ram you can enter into this site: Teacher

Hello Dilip you have no access to this site: Student

User not found

Question Number : 219 Question Id : 640653354240 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Python code snippet.

```
from jinja2 import Template

temp = """{% set numbers = studs | map(attribute = "mark") | list %}
          {{numbers | min}} {{numbers | max}}"""

studs = [
    {"stud_name": "Reeta", "mark": "92"}, 
    {"stud_name": "Veena", "mark": "88"}, 
    {"stud_name": "Meena", "mark": "62"}, 
    {"stud_name": "uma", "mark": "98"}]
]

t1 = """{% for i in studs -%}
          {{i}}
      {- endfor%}"""

output = Template(temp)
out = Template(t1)
print(output.render(studs = studs))
print(out.render(studs = studs))
```

What will be the output of the above program?

Options :

6406531174839. ✘ 98 62

{'stud_name': 'Reeta', 'mark': '92'}

{'stud_name': 'Veena', 'mark': '88'}

{'stud_name': 'Meena', 'mark': '62'}

{'stud_name': 'uma', 'mark': '98'}

6406531174840. ✓ 62 98

{'stud_name': 'Reeta', 'mark': '92'}{'stud_name': 'Veena', 'mark': '88'}{'stud_name': 'Meena', 'mark': '62'}{'stud_name': 'uma', 'mark': '98'}

6406531174841. ✘ 62 98

{'stud_name': 'uma', 'mark': '92'}

{'stud_name': 'Meena', 'mark': '88'}

{'stud_name': 'Veena', 'mark': '62'}

{'stud_name': 'Reeta', 'mark': '98'}

6406531174842. ✘ 98 62

{'stud_name': 'uma', 'mark': '92'}{'stud_name': 'Meena', 'mark': '88'}{'stud_name': 'Veena', 'mark': '62'}{'stud_name': 'Reeta', 'mark': '98'}

Question Number : 220 Question Id : 640653354243 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following table “newtable” in SQLite database.

| ID | Name | Age | Mark | course |
|--------|--------|--------|--------|--------|
| Filter | Filter | Filter | Filter | Filter |
| 1 | Vishnu | 20 | 98 | M1 |
| 2 | Kumar | 18 | 90 | M2 |
| 3 | Leela | 20 | 90 | M1 |
| 4 | Naren | 18 | 98 | M2 |
| 5 | Vishal | 19 | 95 | M1 |
| 6 | Pranav | 20 | 95 | M2 |
| 7 | Vinu | 19 | 90 | M1 |
| 8 | Viki | 18 | 95 | M2 |

What will be the output of the following SQL queries given below?

```
CREATE UNIQUE INDEX IF NOT EXISTS index_name
ON newtable (Name ASC, Mark ASC) WHERE Age>18;
SELECT ID, Name, Age, Mark, course FROM newtable WHERE Age>18;
```

Options :

index_name will be created

| ID | Name | Age | Mark | course |
|----|-------|-----|------|--------|
| 2 | Kumar | 18 | 90 | M2 |
| 4 | Naren | 18 | 98 | M2 |
| 8 | Viki | 18 | 95 | M2 |

6406531174851. ❌

index_name will be created

| ID | Name | Age | Mark | course |
|----|--------|-----|------|--------|
| 3 | Leela | 20 | 90 | M1 |
| 6 | Pranav | 20 | 95 | M2 |
| 7 | Vinu | 19 | 90 | M1 |
| 5 | Vishal | 19 | 95 | M1 |
| 1 | Vishnu | 20 | 98 | M1 |

6406531174852. ✓

6406531174853. ❌

index_name will not be created

| ID | Name | Age | Mark | course |
|----|--------|-----|------|--------|
| 2 | Kumar | 18 | 90 | M2 |
| 4 | Naren | 18 | 98 | M2 |
| 8 | Viki | 18 | 95 | M2 |
| 3 | Leela | 20 | 90 | M1 |
| 6 | Pranav | 20 | 95 | M2 |
| 7 | Vinu | 19 | 90 | M1 |
| 5 | Vishal | 19 | 95 | M1 |
| 1 | Vishnu | 20 | 98 | M1 |

index_name will not be created

| ID | Name | Age | Mark | course |
|----|--------|-----|------|--------|
| 1 | Vishnu | 20 | 98 | M1 |
| 2 | Kumar | 18 | 90 | M2 |
| 3 | Leela | 20 | 90 | M1 |
| 4 | Naren | 18 | 98 | M2 |

6406531174854. ✘

Question Number : 221 Question Id : 640653354245 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Python snippet.

```

@app.route("/search", methods = ["GET"])
def search():
    q= request.args.get('q')
    query = "%" +q+ "%"
    results = Details.query.filter(Details.Content.like(query)).all()
    Return render template("result.html", q=q, Details = results)

```

File : result.html

```

{% for item in results %}
    {{item["Title"]}}
{% endfor %}

```

SQLite table: details

| ID | Title | Content |
|----|--------------|--|
| 1 | Introduction | Java is a powerful general-purpose ... |
| 2 | learn python | Python is a powerful general-purpose ... |
| 3 | Basics | Java works on different platforms (Windo |
| 4 | Code | Python is currently the most widely used |
| | | |

If the flask application is running locally on URL: <http://127.0.0.1:5000>, what will be rendered by the web browser for URL <http://127.0.0.1:5000/search/q=Java>?

Options :

6406531174859. ✖ Introduction

Code

6406531174860. ✖ Java is a powerful general purpose ...

Java works on different platforms(windows)

6406531174861. ✖ Introduction - Java is a powerful general purpose ...

learn python - Python is a powerful general purpose ...

Basics - Java works on different platforms(windows)

6406531174862. ✓ Introduction

Basics

Sub-Section Number : 8

Sub-Section Id : 64065351165

Question Shuffling Allowed : Yes

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Select Question

Consider the HTML code given below.

HTML file: index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
</head>
<body>
<h1>
    <h1>CSS Selectors</h1>
</h1>
<div>
    <h2 id="header-id1" class="header-class">Hi, Folks!</h2>
    <p id="paragraph-id1" class="paragraph-class">Welcome to IITM.</p>
    <a href="https://iitm.ac.in">
        IIT Bsc Degree Website</a>
    <p class="class1 class2">We are launching World's first online
degree course.</p>
</div>
<div>
    <h2 id="header-id2">Have you enrolled to the program?</h2>
    <p id="paragraph-id2">If not, enroll now!</p>
    <a href="https://mywebsite.com
        ">Link to Enroll</a>
    <p class="class2 class3">Happy Learning!</p>
</div>
</body>
</html>
```

CSS Selectors

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Happy Learning!

To obtain the output as given in figure above, which of the following snippets of CSS code must be used?

Options :

```
<style>
    #header-id1, #header-id2, #header-id3
    {
        color: red;
    }
    .header-class{
        color:blue;
    }
    .paragraph-class{
        color:purple;
    }
    p.class2{
        color:green;
    }
</style>
```

6406531174799. ✘

```
<style>
    #header-id1, #header-id2, #header-id3
    {
        color: red;
    }
    .header-class{
        color:blue;
    }
    p.class2{
        color:green;
    }
    #paragraph-id1, #paragraph-id2{
        color:purple;
    }
</style>
```

6406531174800. ✓

6406531174801. ✘

```
<style>
    h2{
        color: red;
    }
    .header-class{
        color:blue;
    }
    p.class3{
        color:green;
    }
    #paragraph-id{
        color:purple;
    }
</style>
```

```
<style>
    h2{
        color: blue;
    }
    h2{
        color: red;
    }
    #paragraph-id1, #paragraph-id2{
        color:purple;
    }
    p.class2{
        color:green;
    }
</style>
```

6406531174802. ✓

Sub-Section Number : 9

Sub-Section Id : 64065351166

Question Shuffling Allowed : No

Question Id : 640653354217 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (223 to 224)

Question Label : Comprehension

Consider the following model classes “State” and “City” corresponding to tables “state” and “city”

respectively in the SQLite database.

```
class State(db.Model):
    state_id = db.Column(db.Integer(), primary_key = True)
    state_name = db.Column(db.String(50), nullable = False)
    cities = db.relationship("City", backref = "stateof")

class City(db.Model):
    city_id = db.Column(db.Integer(), primary_key = True)
    city_name = db.Column(db.String(50), nullable = False)
    state = db.Column(db.Integer(), db.ForeignKey("state.state_id"))
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 223 Question Id : 640653354218 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

If an object “s1” that represents an existing record in the table “state” is defined as `s1 = State.query.get(1)`,

The correct way(s) to add a city with the name “Chennai” that belongs to s1 using the Python console is.

Options :

```
>>> c1 = City(city_name = "Chennai", state = s1)
>>> db.session.add(c1)
>>> db.session.commit()
```

6406531174758. *

```
>>> c1 = City(city_name = "Chennai", state = 1)
>>> db.session.add(c1)
>>> db.session.commit()
```

6406531174759. ✓

6406531174760. ✓

```
>>> c1 = City(city_name = "Chennai", stateof = s1)
>>> db.session.add(c1)
>>> db.session.commit()
```

```
>>> c1 = City(city_name = "Chennai", stateof = 1)
>>> db.session.add(c1)
>>> db.session.commit()
```

6406531174761. ✘

Question Number : 224 Question Id : 640653354219 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

If "s1" and "c1" are existing objects in the tables "state" and "city" respectively where:

```
s1 = State.query.filter_by(state_name = "Maharashtra").first()
```

and

```
c1 = City.query.filter_by(city_name = "Mumbai").first()
```

Which of the following statements is/are correct?

Options :

6406531174762. ✘ The input s1.cities on Python console will return a single object

6406531174763. ✓ The input s1.cities on Python console will return a list of object(s)

6406531174764. ✓ The input c1.state on Python console will return a single object

6406531174765. ✘ The input c1.state on Python console will return a list of object(s)

Question Id : 640653354222 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (225 to 226)

Question Label : Comprehension

Consider the following resource API for the employee information given below and answer the given subquestions.

```
from flask import Flask
from flask_restful import Resource, Api, reqparse, fields,
marshal_with

app = Flask('__main__')
api = Api(app)

parser = reqparse.RequestParser()
parser.add_argument("first_name")
parser.add_argument("last_name")
parser.add_argument("role")
parser.add_argument("salary", type=int, help='Salary must be an
integer')

out_fields_1 = {"first_name": fields.String, "role": fields.String}
out_fields_2 = {"first_name": fields.String, "last_name": fields.String}
out_fields_3 = {"first_name": fields.String, "salary": fields.Integer}

class MyApi(Resource):
    @marshal_with(out_fields_2)
    def get(self):
        info = parser.parse_args()
        return info

    @marshal_with(out_fields_1)
    def post(self):
        info = parser.parse_args()
        return info

    @marshal_with(out_fields_3)
    def put(self):
        info = parser.parse_args()
        return info

api.add_resource(MyApi, '/myinfo')
app.run(debug = True)
```

Sub questions

Question Number : 225 Question Id : 640653354223 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

If the flask application is running locally on URL "<http://127.0.0.1:5000/myinfo>", what will be the output of the following curl request?

```
curl "http://127.0.0.1:5000/myinfo" -X POST -d "{\"first_name\": \"Shrivatsa\", \"last_name\": \"Tandon\", \"role\": \"Analyst\", \"salary\": 50000}" -H "Content-Type: application/json"
```

Options :

```
{  
    "first_name": "Shrivatsa",  
    "last_name": "Tandon"  
}
```

6406531174774. *

```
{  
    "first_name": "Shrivatsa",  
    "salary": 50000  
}
```

6406531174775. *

```
{  
    "first_name": "Shrivatsa",  
    "role": "Analyst"  
}
```

6406531174776. ✓

```
{  
    "first_name": "Shrivatsa",  
    "last_name": "Tandon",  
    "role": "Analyst",  
    "salary": 50000  
}
```

6406531174777. *

Question Number : 226 Question Id : 640653354224 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

If the flask application is running locally on URL "<http://127.0.0.1:5000/myinfo>", what will be the output of the following Python code snippet?

```
import requests

data = {"first_name": "Rajnish",
        "last_name": "Dey",
        "role": "Manager",
        "salary": "10 thousand"}

response = requests.put('http://127.0.0.1:5000/myinfo', data = data)
print(response.json())
```

Options :

```
{  
    'first_name': 'Rajnish',  
    'salary': '10 thousand'  
}
```

6406531174778. ✘

```
{  
    'first_name': 'Rajnish',  
    'role': 'Manager'  
}
```

6406531174779. ✘

```
{  
    'first_name': 'Rajnish',  
    'last_name': 'Dey'  
}
```

6406531174780. ✘

6406531174781. ✓ None of these

App dev2

| | |
|---|-------------|
| Section Id : | 64065322251 |
| Section Number : | 7 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 33 |
| Number of Questions to be attempted : | 33 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351167 |
| Question Shuffling Allowed : | No |

Question Number : 227 Question Id : 640653354247 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: MODERN APPLICATION DEVELOPMENT 2"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174867. ✓ Yes

6406531174868. ✗ No

Sub-Section Number :

2

| | |
|-------------------------------------|-------------|
| Sub-Section Id : | 64065351168 |
| Question Shuffling Allowed : | Yes |

Question Number : 228 Question Id : 640653354248 Question Type : MSQ Is Question
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding JavaScript language?

Options :

- 6406531174869. ❌ JavaScript is a low level programming language.
- 6406531174870. ✓ The “const” keyword can be used to declare objects with block level scope.
- 6406531174871. ❌ Int, char are some primitive data types in the JavaScript language.
- 6406531174872. ✓ The JavaScript language supports both the first order and higher order functions.

Question Number : 229 Question Id : 640653354254 Question Type : MSQ Is Question
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are false?

Options :

- 6406531174893. ✓ A web application must implement token based authentication to make the application secure.
- 6406531174894. ❌ The JAMStack approach separates out the frontend from the backend, and they both can be updated/modified independently without affecting the other.
- 6406531174895. ❌ It is recommended to avoid the usage of verbs in the API data URLs.
- 6406531174896. ✓ The idea behind bringing an API is to implement caching.

Question Number : 230 Question Id : 640653354255 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding Celery and Redis?

Options :

6406531174897. ❌ A Celery system can only use Redis as the message broker.

6406531174898. ✓ A Celery system may consist of a number of batch jobs.

6406531174899. ✓ A Celery system needs worker(s) to execute tasks.

6406531174900. ❌ All of these

Question Number : 231 Question Id : 640653354263 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding webhooks and polling?

Options :

6406531174929. ✓ A webhook uses HTTP protocol.

6406531174930. ✓ The term “polling” generally refers to short polling.

6406531174931. ✓ Webhooks are used for 1 way communication, unlike web sockets.

6406531174932. ❌ In polling, the connection to the server is kept open, until the data is available.

Question Number : 232 Question Id : 640653354264 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding cookies?

Options :

6406531174933. ✘ Cookies are stored on the server.

6406531174934. ✓ Cookies are stored on the browser.

6406531174935. ✓ Browser sends the cookies to the origin server automatically in general.

6406531174936. ✘ Client has to include cookies manually with the request, in general.

Question Number : 233 Question Id : 640653354266 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding OAuth?

Options :

6406531174941. ✓ It is a protocol to allow access to resources, hosted on a different server, on behalf of a user.

6406531174942. ✓ It is used for authorization.

6406531174943. ✘ It is used for authentication.

6406531174944. ✘ None of these

Question Number : 234 Question Id : 640653354267 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following is true regarding the Closure in JavaScript?

Options :

6406531174945. ✘ Closure is the state of the outer function.

6406531174946. ✘ Closure is the state of a variable.

6406531174947. ✓ Closure is a function along with its lexical environment or surrounding state.

6406531174948. ✓ Closures are created every time a function is created in JavaScript.

Sub-Section Id :

64065351169

Question Shuffling Allowed :

Yes

Question Number : 235 Question Id : 640653354249 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following shows the correct output if the javascript program written below is executed?

```
const arr = [1, 2, 3, 4, 5, 6, 7, 8]
const arr1 = arr.map(r => r**3)
const arr2 = arr1.filter(r => ((r % 3 == 2) || (r % 4 == 3)))
console.log(arr2)
```

Options :

6406531174873. ❌ [1, 8, 125, 343, 512]

6406531174874. ❌ [8, 27, 64, 343, 512]

6406531174875. ✓ [8, 27, 125, 343, 512]

6406531174876. ❌ None of these

Question Number : 236 Question Id : 640653354252 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<div id = "app">
  <input v-model = "name" @input = "do_something">
  <p> {{age}} </p>
</div>
<script scr = "app.js"></script>
```

app.js:

```
new Vue({
  el : "#app",
  data : {
    name : "#app",
    age : 0,
  },
  mounted () {
    try {
      this.name = localStorage.getItem("name").split(" ")[0];
      this.age = localStorage.getItem("name").split(" ")[1];
    }
    catch {
      this.name = "Default";
      this.age = "Default";
    }
  },
  methods : {
    do_something() {
      localStorage.setItem("name", this.name);
      localStorage.setItem("age", this.age);
    }
  }
})
```

Suppose you open “index.html” file in a browser, and type the text “IIT Madras” in the text box shown (after removing the previous text, if any), and hard refresh the page twice, without clicking anywhere. What will be the value shown in the text box, and the “age” placeholder, respectively?

Options :

6406531174885. ❌ The app will show an error in the console

6406531174886. ❌ Default, Default

6406531174887. ✓ IIT, Madras

6406531174888. ✗ None of these

Question Number : 237 Question Id : 640653354257 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following statements is false regarding CORS and CSRF?

Options :

6406531174905. ✓ The flask framework enforces CSRF protection by default.

6406531174906. ✗ The CORS mechanism allows a developer to secure a web application from external origins.

6406531174907. ✗ The CORS headers are generally prefixed with the value "Access-Control-Allow".

6406531174908. ✗ An anti CSRF token must be sent with the request, if CSRF protection is enabled.

Question Number : 238 Question Id : 640653354270 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup "index.html" and javascript file "app.js".

index.html:

```
<html>
  <head>
    <style>
      .onstrike {
        color: blue;
      }
    </style>
  </head>
  <body>
    <div id="app">
      <div :class="{onstrike:changeStrike}" id="run">{{run}}</div>
      <button @click="run+=4">Six</button>
      <button @click="run+=3">Four</button>
    </div>
    <script
      src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
    <script src="app.js" type="module"></script>
  </body>
</html>
```

app.js:

```
new Vue({
  el: '#app',
  data: { run: 0 },
  computed: {
    changeStrike() {
      return this.run % 2 === 0 ? true : false
    },
  },
})
```

What will be the color of text rendered inside the div with ID “run”, if the user clicks on the button with text “Six”, 3 times and the button with text “Four”, 4 times?

Options :

6406531174957. ❌ Black

6406531174958. ✓ Blue

6406531174959. ✘ White

6406531174960. ✘ None of these

Question Number : 239 Question Id : 640653354271 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <style>
      .active {
        color: blue;
      }
      .bold {
        font-weight: bold;
      }
    </style>
  </head>
  <body>
    <div id="app">
      <Home class="bold" />
    </div>
  </body>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script src="app.js" type="module"></script>
</html>
```

app.js:

```
Vue.component('Home', {  
  template: `<div class='active'>  
    IITM online degree  
</div>`,  
})  
  
new Vue({  
  el: '#app',  
})
```

What will be the color and font-weight of the text “IITM online degree”?

Options :

6406531174961. ✘ blue, normal

6406531174962. ✘ black, normal

6406531174963. ✓ blue, bold

6406531174964. ✘ black, bold

Question Number : 240 Question Id : 640653354272 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <template v-for="cont in contributions">
      <div>{{cont.player}}: {{cont.run}}/{{partnerShip}}</div>
    </template>
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
new Vue({
  el: '#app',
  data: {
    partnerShip: 210,
    contributions: [
      { player: 'Rohit', run: 100 },
      { player: 'Kohli', run: 110 },
    ],
  },
})
```

What will be rendered on the screen?

Options :

6406531174965. ✓ Rohit: 100/210

Kohli: 110/210

6406531174966. ✗ Rohit: 0.48

Kohli: 0.52

6406531174967. ✗ Rohit: 100

Kohli: 110

6406531174968. ✗ None of these

Question Number : 241 Question Id : 640653354274 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <div>
      <select v-model="collType">
        <option value="all">All</option>
        <option value="typeOne">Type One</option>
        <option value="typeTwo">Type Two</option>
      </select>
    </div>
    <div id="collections">
      <Numbers :numbers="numbers" v-show="collType==='all'">
        <Numbers :numbers="typeOne" v-show="collType==='typeOne'">
          <Numbers :numbers="typeTwo" v-show="collType==='typeTwo'">
        </Numbers>
      </Numbers>
    </div>
    <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
    <script src="app.js" type="module"></script>
  </body>
```

app.js:

```
Vue.component('Numbers', {
  template: `<div>
    <span v-for="num in numbers">
      {{num}}
    </span></div>`,
  props: ['numbers'],
})

new Vue({
  el: '#app',
  data: {
    numbers: [2, 3, 4, 6, 7],
    collType: 'typeOne',
  },
  computed: {
    typeOne() {
      return this.numbers.filter((num) => num % 2 === 0)
    },
    typeTwo() {
      return this.numbers.filter((num) => num % 2 != 0)
    },
  },
})
```

What will be rendered inside the div with ID “collections”, when the user selects the option “Type Two” ?

Options :

6406531174973. ✘ 2 3 4 6 7

6406531174974. ✘ 2 4 6

6406531174975. ✓ 3 7

6406531174976. ✘ None of these

Question Number : 242 Question Id : 640653354275 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <custom-input v-model="searchText"></custom-input>
    <div id="result">Searching for: {{searchText}}</div>
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
Vue.component('custom-input', {
  props: ['value'],
  template: `
    <input
      v-bind:value="value"
      v-on:input="$emit('input', $event.target.value)"
    >
  `,
})
new Vue({
  el: '#app',
  data: { searchText: 'type something ...' },
})
```

Suppose the user types “Apple” in the input box (after removing the existing text, if any). What will be rendered inside the div with ID “result”?

Options :

6406531174977. ❌ Searching for:

6406531174978. ❌ Apple

6406531174979. ❌ Searching for: ‘type something ...’

Question Number : 243 Question Id : 640653354276 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <router-view></router-view>
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script
src="https://unpkg.com/vue-router@2.0.0/dist/vue-router.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
const Profile = {
  template: `<div> Welcome {{this.$route.params.name}}</div>`,
}

const Home = {
  template: `<div> This is home page
    <button @click='goToProfile'> Go to profile </button>
  </div>`,
  methods: {
    goToProfile() {
      this.$router.push({ name: 'profile', params: { name: 'narendra' } })
    },
  },
}

const router = new VueRouter({
  routes: [
    { path: '/profile/:name', name: 'profile', component: Profile },
    { path: '/', component: Home },
  ],
})
new Vue({  
  el: '#app',  
  router,  
})
```

Suppose the application is running on '<http://127.0.0.1:8080/>'. If the user visits the application for the first time and clicks on the button "Go to profile", what will be displayed on the screen?

Options :

6406531174981. ✓ Welcome narendra

6406531174982. ✗ Welcome

6406531174983. ✗ narendra

6406531174984. ✗ None of these

Question Number : 244 Question Id : 640653354277 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <router-view></router-view>
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script
src="https://unpkg.com/vue-router@2.0.0/dist/vue-router.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
const Movies = {
  template: `<div><ul>
    <div>Movies</div>
    <router-view />
  </ul></div>`,
}
const Error = {
  template: `<div> Some Error</div>`,
}
const Hindi = {
  template: `<div><ul>
    <li v-for='movie in hindiMovies'>{{movie.name}}</li>
  </ul></div>`,
  data() {
    return {
      movies: [
        { name: 'Soley', language: 'hindi' },
        { name: 'Dexter', language: 'english' },
      ],
    }
  },
  computed: {
    hindiMovies() {
      return this.movies.filter((movie) => {
        return movie.language === 'english'
      })
    },
  },
}
}

const router = new VueRouter({
  routes: [
    {
      path: '/',
      component: Movies,
      children: [
        { path: 'hindi', component: Hindi },
        { path: '*', component: Error },
      ],
    },
  ],
})
new Vue({
  el: '#app',
  router,
})
```

Suppose the application is running on '<http://127.0.0.1:8080/>'. What will be rendered for the URL "<http://127.0.0.1:8080/#/>"?

Options :

6406531174985. ❌ Movies

6406531174986. ✓ Movies

Some Error

6406531174987. ✘ Movies

Soley

6406531174988. ✘ Movies

Dexter

Question Number : 245 Question Id : 640653354279 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <custom-comp ref="custom" />
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
Vue.component('custom-comp', {
  data() {
    return { name: 'Rohit Sharma' }
  },
  template: `<div>Welcome {{name}}</div>`,
})
```

```
new Vue({
  el: '#app',
  mounted() {
    this.$refs.custom.name = 'Virat Kohli'
  },
})
```

What will be rendered inside the “custom-comp” component?

Options :

6406531174993. ❌ Welcome Rohit Sharma

6406531174994. ✓ Welcome Virat Kohli

6406531174995. ❌ Welcome

6406531174996. ❌ None of these

Sub-Section Number : 4

Sub-Section Id : 64065351170

Question Shuffling Allowed : Yes

Question Number : 246 Question Id : 640653354250 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following is the correct way to do class binding in Vue (to apply 'classA' on the div element), if the data object in the Vue constructor is defined as below?

```
data : {  
  
    classObj : {  
        classA : true,  
        classB : false  
    },  
  
    classA : true,  
    classB : false,  
}
```

Options :

6406531174877. ✓ <div :class = “{classA : classA, classB : classB}”> </div>

6406531174878. ✗ <div :class = “{classA : ‘classA’, classB : ‘classB’}”> </div>

6406531174879. ✓ <div :class = “classObj”> </div>

6406531174880. ✗ <div :class = “{classObj}”> </div>

Question Number : 247 Question Id : 640653354256 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statement(s) is/are false?

Options :

6406531174901. ❌ The server sent events is a mechanism for a server to push events, and it must require service workers on the client to function properly.
6406531174902. ✓ In general, a webhook is meant to pull message(s) from an application.
6406531174903. ❌ The usage of a message broker over “point-to-point” communication makes the application scalable.
6406531174904. ✓ There is no difference between webhooks and short polling.

Question Number : 248 Question Id : 640653354259 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding Celery and Redis, assuming a task named “send_email” is defined using 2 approaches given below?

Approach 1: send_email.delay()

Approach 2: send_email.apply_async(countdown = 10)

Options :

6406531174913. ❌ The approach 1 will wait for a user input before dispatching the task to the celery system.
6406531174914. ❌ The approach 2 will dispatch the task to the celery system after waiting for 10 seconds, and start the execution, assuming a worker is available.
6406531174915. ✓ The approach 2 will immediately dispatch the task to the celery system, but start the execution after waiting for 10 seconds, assuming a worker is available.
6406531174916. ✓ The approach 1 will immediately dispatch the task to the celery system, and start the execution, assuming a worker is available.

Question Number : 249 Question Id : 640653354262 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statement(s) is/are false regarding Vuex and Vue router?

Options :

6406531174925. ✓ In general, an application should have separate Vuex stores for all the components.

6406531174926. ❌ A path defined in the routes array in Vue router can consist of a number of children paths.

6406531174927. ✓ The wildcard (*) should be put at the top of the routes array in the Vue router, so that it matches with all the paths, which are not implemented.

6406531174928. ✓ A Vuex store must be used with all Vue applications.

Question Number : 250 Question Id : 640653354265 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding fetch API?

Options :

6406531174937. ✓ The credentials property of the Request interface allows the user agent to send or receive cookies in cross-origin requests.

6406531174938. ✓ The value "omit" of "credentials" will force the browser not to send cookies with the request.

6406531174939. ✓ The value "include" of "credentials" will allow the browser to send credentials even in cross-origin requests.

6406531174940. ❌ The value "include" of "credentials" will allow the browser to send credentials only for same origin requests.

Sub-Section Number :

5

Sub-Section Id :

64065351171

Question Shuffling Allowed :

Yes

Question Number : 251 Question Id : 640653354251 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Which of the following shows the correct output, if the javascript program written below is executed?

```
new Promise((reject, resolve) => {
    let a = 2 * 4 || 0 / 4;
    let b = 3 * 4 && 0 / 4;

    if (a > b) resolve(a);
    else reject(b);
}).then(d => console.log("Passed:", d))
.catch(e => console.log("Failed:", e))
.finally(d => {
    console.log("About to finish")
    return "Over"
}).then(d => console.log("Finished !!", d))
```

Options :

6406531174881. ❌ Failed: 2

About to finish

Finished !! Over

6406531174882. ❌ Passed: 0

About to finish

Finished !! undefined

6406531174883. ❌ Passed: 0

About to finish

Finished !! Over

6406531174884. ✓ Failed: 8

About to finish

Finished !! undefined

Question Number : 252 Question Id : 640653354253 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Suppose you own a company where you want to hire candidates for an upcoming project on a deputation basis, and you have received a lot of applications. On discussing with your team members, you decided to shortlist the candidates based on the following 2 criteria:

1. The candidate must have at least 3 years of experience
2. The candidate's age must be less than 30 years

Fill in the **code1** & **code2**, which can be used in Vuex Store to update the “shortlisted” state variable with the objects of those candidates who satisfy the above-mentioned criteria. Also, predict the length of the state variable “shortlisted”, after the mutation has completed its execution.

```

const store = new Vuex.Store({
  state : {
    candidates : [
      {
        name : 'sample1',
        age : 28,
        experience : 2.5
      },
      {
        name : 'sample2',
        age : 35,
        experience : 3.5
      },
      {
        name : 'sample3',
        age : 32,
        experience : 3
      },
      {
        name : 'sample4',
        age : 38,
        experience : 2
      },
    ],
    shortlisted : []
  },
  mutations : {
    update_final(state, minimum) {
      for (candidate of state.candidates)
        code2
    }
  },
  actions : {
    send_task : function (context) {
      code1
    }
  }
})

```

Options :

```

code1: this.$store.commit("update_final", 2);
code2: if (candidate.experience >= minimum && candidate.age < 30)
        state.shortlisted.push(company)

```

6406531174889. ✖ Length: 3

```
code1: context.commit("update_final", 2);
code2: if (experience >= minimum && candidate.age < 30)
      state.shortlisted.push(company)
```

6406531174890. ✘ Length: 2

```
code1: this.$store.commit("update_final", 3);
code2: if (experience >= minimum && candidate.age < 30)
      state.shortlisted.push(company)
```

6406531174891. ✘ Length: 3

```
code1: context.commit("update_final", 3);
code2: if (candidate.experience >= minimum && candidate.age < 30)
      state.shortlisted.push(company)
```

6406531174892. ✓ Length: 2

Question Number : 253 Question Id : 640653354258 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following javascript program, and predict the output, if executed.

```
let propA = 10;

const obj1 = {
    propA : 20,
    propB : function () {
        console.log(propA, this.propA)
    }
}

const obj2 = {
    propA : 30,
    propB : function () {

        let func = () => console.log(propA, this.propA)

        func()
    }
}

obj2.propB.call(obj1);
```

Options :

6406531174909. ✘ 10 30

6406531174910. ✓ 10 20

6406531174911. ✘ 10 undefined

6406531174912. ✘ The program will raise an error

Question Number : 254 Question Id : 640653354260 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following javascript program, and predict the output, if executed. Also, predict the minimum time taken (in seconds) to log the value "Executing" on the console.

```
async function some () {  
  
    let promise = await new Promise((res, rej) => {  
        setTimeout(() => res("Execution Started"), 1000)  
    });  
    let a = await promise;  
    let b = a.replace("e", "")  
    return new Promise ((rej, res) => {  
  
        let c = a + "\n" + b;  
        rej(c);  
    })  
}  
some().then(d => console.log(d))  
.catch(e => console.log("Error"))  
console.log("Executing")
```

Options :

6406531174917. ✨ Executing

Execution Started

Excution Started

Time: 2 seconds

6406531174918. ✨ Execution Started

Excution Startd

Executing

Time: 2 seconds

6406531174919. ✓ Executing

Execution Started

Excution Started

Time: 0 seconds

6406531174920. ✨ Execution Started

Excution Started

Executing

Time: 0 seconds

Question Number : 255 Question Id : 640653354268 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following JavaScript program.

```
const p = function (t) {
    return new Promise((resolve, reject) => {
        setTimeout(() => {
            resolve(t)
        }, t * 1000)
    })
}

data = []
asyncFunc = async function () {
    p1 = await p(1)
    p2 = await p(2)
    data.push(p2)
    data.push(p1)
}
asyncFunc()
data.push('Outer')
console.log(data)
```

What will be logged on to the console?

Options :

6406531174949. ❌ ['Outer', 2, 1]

6406531174950. ❌ ['Outer', 1, 2]

6406531174951. ❌ [2, 1, 'Outer']

6406531174952. ✓ ['Outer']

Question Number : 256 Question Id : 640653354269 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<html>
  <head>
    <style>
      .onstrike {
        color: blue;
      }
    </style>
  </head>
  <body>
    <div id="app">
      <div :class="{onstrike:changeStrike}" id="run">{{ run }}</div>
      <button @click="run+=4">Six</button>
      <button @click="run+=3">Four</button>
    </div>
    <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
    <script src="app.js" type="module"></script>
  </body>
</html>
```

app.js:

```
new Vue({
  el: '#app',
  data: { run: 0 },
  computed: {
    changeStrike() {
      return this.run % 2 === 0 ? true : false
    },
  },
})
```

What will be rendered inside the div for ID “run”, if the user clicks on the button with text “Six”, 3 times and the button with text “Four”, 4 times?

Options :

6406531174953. ✓ 24

6406531174954. ✗ 34

6406531174955. ✗ 48

6406531174956. ✗ None of these

Question Number : 257 Question Id : 640653354273 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <div>
      <select v-model="collType">
        <option value="all">All</option>
        <option value="typeOne">Type One</option>
        <option value="typeTwo">Type Two</option>
      </select>
    </div>
    <div id="collections">
      <Numbers :numbers="numbers" v-show="collType==='all'">
    /></Numbers>
      <Numbers :numbers="typeOne" v-show="collType==='typeOne'">
    /></Numbers>
      <Numbers :numbers="typeTwo" v-show="collType==='typeTwo'">
    /></Numbers>
    </div>
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
Vue.component('Numbers', {
  template: `<div>
    <span v-for="num in numbers">
      {{num}}
    </span></div>`,
  props: ['numbers'],
})

new Vue({
  el: '#app',
  data: {
    numbers: [2, 3, 4, 6, 7],
    collType: 'typeOne',
  },
  computed: {
    typeOne() {
      return this.numbers.filter((num) => num % 2 === 0)
    },
    typeTwo() {
      return this.numbers.filter((num) => num % 2 != 0)
    },
  },
})
```

What will be rendered inside the div with ID “collections”, when the browser loads the application for the first time?

Options :

6406531174969. ✘ 2 3 4 6 7

6406531174970. ✓ 2 4 6

6406531174971. ✘ 3 7

6406531174972. ✘ None of these

Question Number : 258 Question Id : 640653354278 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<body>
  <div id="app">
    <router-view></router-view>    \  \
  </div>
  <script
src="https://cdn.jsdelivr.net/npm/vue@2/dist/vue.js"></script>
  <script
src="https://unpkg.com/vue-router@2.0.0/dist/vue-router.js"></script>
  <script src="app.js" type="module"></script>
</body>
```

app.js:

```
const Movies = {
  template: `<div><ul>
    <div>Movies</div>
    <router-view />
  </ul></div>`,
}
const Error = {
  template: `<div> Some Error</div>`,
}
const Hindi = {
  template: `<div><ul>
    <li v-for='movie in hindiMovies'>{{movie.name}}</li>
  </ul></div>`,
  data() {
    return {
      movies: [
        { name: 'Soley', language: 'hindi' },
        { name: 'Dexter', language: 'english' },
      ],
    }
  },
  computed: {
    hindiMovies() {
      return this.movies.filter((movie) => {
        return movie.language === 'english'
      })
    },
  },
}
const router = new VueRouter({
  routes: [
    {
      path: '/',
      component: Movies,
      children: [
        { path: 'hindi', component: Hindi },
        { path: '**', component: Error },
      ],
    },
  ],
})
new Vue({
  el: '#app',
  router,
})
```

What will be rendered inside the router-view component of Movies component for the URL "<http://127.0.0.1:8080/#/hindi>"?

Options :

6406531174989. ❌ Some Error

6406531174990. ❌ Soley

6406531174991. ✓ Dexter

6406531174992. ✘ None of these

Sub-Section Number : 6

Sub-Section Id : 64065351172

Question Shuffling Allowed : Yes

Question Number : 259 Question Id : 640653354261 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following statement(s) is/are correct regarding cookies, local storage, and session storage?

Options :

6406531174921. ✘ The local storage is a browser based persistent storage.

6406531174922. ✘ Cookies are preferred over session or local storage, when the data needs to be sent with every request.

6406531174923. ✘ The cookies can be set from the server as well as using javascript on the client.

6406531174924. ✓ All of these

BDM

Section Id : 64065322252

Section Number : 8

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 32

Number of Questions to be attempted : 32

Section Marks : 40

Display Number Panel : Yes

| | |
|---|-------------|
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351173 |
| Question Shuffling Allowed : | No |

Question Number : 260 Question Id : 640653354280 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: BUSINESS DATA MANAGEMENT"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531174997. ✓ Yes

6406531174998. ✘ No

| | |
|-------------------------------------|-------------|
| Sub-Section Number : | 2 |
| Sub-Section Id : | 64065351174 |
| Question Shuffling Allowed : | Yes |

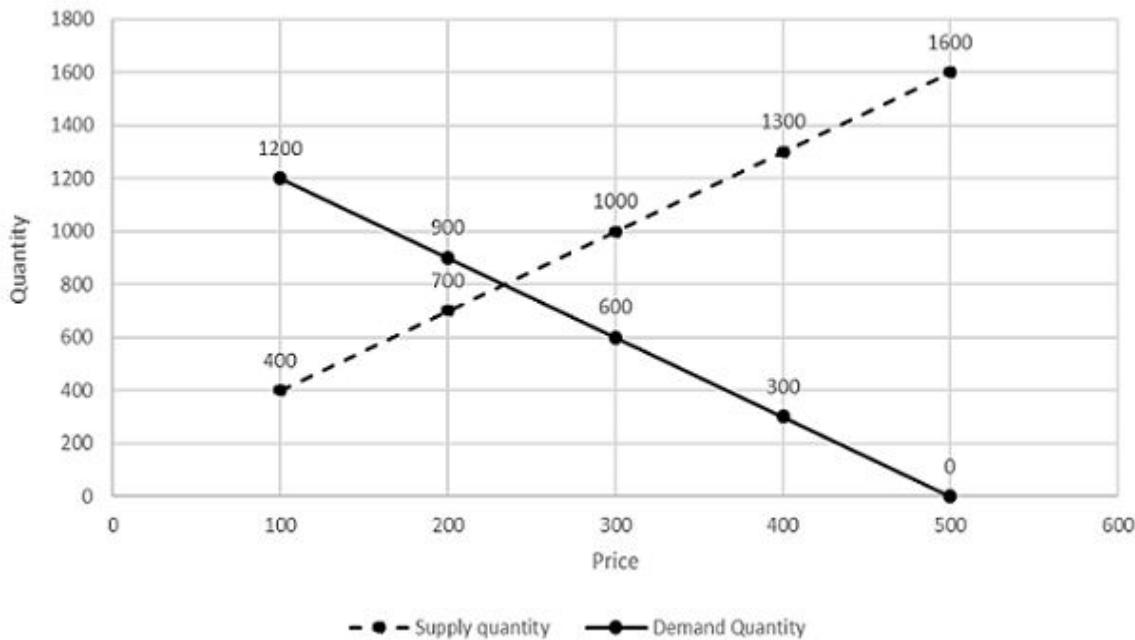
Question Number : 261 Question Id : 640653354292 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Given the below figure on the relationship between price, supply and demand, what are the equilibrium price, shortage price and surplus price respectively?



Options :

6406531175017. ❌ Rs. 233, Rs. 250 and Rs.200

6406531175018. ✓ Rs. 233, Rs. 200 and Rs.250

6406531175019. ❌ Rs. 800, Rs. 1000 and Rs. 600

6406531175020. ❌ Rs. 800, Rs. 600 and Rs. 1000

Question Number : 262 Question Id : 640653354293 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is not a source of survey data?

Options :

6406531175021. ✓ Stock market data

6406531175022. ❌ Market research data

6406531175023. ❌ Consumer pyramid data

6406531175024. ❌ None of these

Question Number : 263 Question Id : 640653354294 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Match the following:

| | |
|---------------------------|---------------------------|
| 1. Grain grinding | a. Ancillary industry |
| 2. Leather work | b. Consumer good industry |
| 3. Textiles | c. Village industry |
| 4. Manufacturing tractors | d.Cottage industry |

Options :

6406531175025. ✓ 1 - c, 2 - d, 3 - b, 4 - a

6406531175026. ✗ 1 - d, 2 - c, 3 - b, 4 - a

6406531175027. ✗ 1 - b, 2 - d, 3 - c, 4 - a

6406531175028. ✗ 1 - a, 2 - d, 3 - c, 4 - b

Question Number : 264 Question Id : 640653354296 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

With the following data, figure out which SKU has the maximum Average Days of Inventory

| Stock Keeping Unit | Open Stock in Warehouse | Avg Daily Sales |
|--------------------|-------------------------|-----------------|
| F01 | 34.2 | 14.0 |
| F02 | 24.1 | 5.8 |
| F03 | 19.9 | 5.1 |
| F04 | 19.6 | 3.9 |

Options :

6406531175033. ✘ F01

6406531175034. ✘ F02

6406531175035. ✘ F03

6406531175036. ✓ F04

Question Number : 265 Question Id : 640653354297 Question Type : MCQ Is Question**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 1**

Question Label : Multiple Choice Question

From the table, calculate the revenue growth on 8th July 2022 with respect to 7th July 2022 and select the closest option given below.

| Date | Revenue Generated |
|--------------------|--------------------|
| 01-07-2022 | ₹ 6,03,880 |
| 02-07-2022 | ₹ 5,72,620 |
| 03-07-2022 | ₹ 5,96,220 |
| 04-07-2022 | ₹ 6,21,660 |
| 05-07-2022 | ₹ 6,39,420 |
| 06-07-2022 | ₹ 6,17,920 |
| 07-07-2022 | ₹ 5,79,140 |
| 08-07-2022 | ₹ 5,80,380 |
| 09-07-2022 | ₹ 6,14,380 |
| 10-07-2022 | ₹ 5,91,360 |
| 11-07-2022 | ₹ 6,20,220 |
| 12-07-2022 | ₹ 5,64,220 |
| 13-07-2022 | ₹ 5,97,820 |
| 14-07-2022 | ₹ 6,05,160 |
| 15-07-2022 | ₹ 5,80,020 |
| Grand Total | ₹ 89,84,420 |

Options :

6406531175037. ✘ 3%

6406531175038. ✘ -3%

6406531175039. ✘ 1%

6406531175040. ✓ 0%

Question Number : 266 Question Id : 640653354298 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Pareto chart does not identify _____.

Options :

6406531175041. ✘ The Products which contribute to all of the company's revenue and sales volumes

6406531175042. ✘ The Products which do not contribute at all towards the revenue and sales

6406531175043. ✘ Company's best performing Products

6406531175044. ✓ Future Trends

Question Number : 267 Question Id : 640653354299 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Match the following.

| | | | |
|---|---------------------------------|---|--|
| 1 | Pareto Principle | a | Current Assets - Current Liabilities |
| 2 | Working Capital | b | With the available Open Stock, how many days of demand can be met? |
| 3 | Average Days of Inventory Cover | c | 80:20 Analysis |
| 4 | Backorder | d | Accepting an order that is temporarily out of stock |

Options :

6406531175045. ✓ 1: c; 2: a; 3: b; 4: d

6406531175046. ✘ 1: a; 2: c; 3: b; 4: d

6406531175047. ✘ 1: b; 2: c; 3: a; 4: d

6406531175048. ✘ 1: a; 2: b; 3: d; 4: c

Question Number : 268 Question Id : 640653354307 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

When arranging the type of plans in ascending order, their duration of the plan (in terms of Time), Which of the following sequence is more appropriate for low technology and quick set up factory operation?

Options :

6406531175074. ✘ Strategic Plan – Capacity Requirement Plan – Purchase Plan – Production Plan – Shift Operation Plan

6406531175075. ✓ Shift Operation Plan – Production Plan – Purchase Plan – Capacity Requirement Plan – Strategic Plan

6406531175076. ✘ Shift Operation Plan – Production Plan – Purchase Plan – Strategic Plan - Capacity Requirement Plan

6406531175077. ✘ Shift Operation Plan – Purchase Plan – Production Plan – Capacity Requirement Plan – Strategic Plan

Question Number : 269 Question Id : 640653354308 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The graph below indicates which of the following

Production Issue and Order Quantity (Blank-011)



Options :

6406531175078. ✘ Order Quantity is constant between Mar-19 and Jan-20
6406531175079. ✘ Order Quantity follows production issues
6406531175080. ✓ Order Quantity is likely to be influenced by existing inventory
6406531175081. ✘ No meaningful conclusion can be arrived from the graph.

Question Number : 270 Question Id : 640653354309 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Internal Pool Sourcing is_____

Options :

6406531175082. ✘ pooling employees together to form a team
6406531175083. ✓ filling a vacant position from within the organisation
6406531175084. ✘ transferring an employee to the bench once the project is completed
6406531175085. ✘ firing an employee from the project

Question Number : 271 Question Id : 640653354312 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is typically not a component of the “job description”?

Options :

6406531175094. ❌ Skills required for the job

6406531175095. ❌ Key responsibilities

6406531175096. ❌ job performance indicators

6406531175097. ✓ recruitment process

Question Number : 272 Question Id : 640653354313 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is not true?

Options :

6406531175098. ✓ appraisal of the candidate is a mandatory input during the recruitment process

6406531175099. ❌ appraisal is the process of evaluating an employee's current and/or past performance against certain predetermined standards

6406531175100. ❌ All organisations have formal or informal means of appraising their employees' performance

6406531175101. ❌ The performance appraisal process will include defining the job, appraising performance and providing feedback

Question Number : 273 Question Id : 640653354314 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

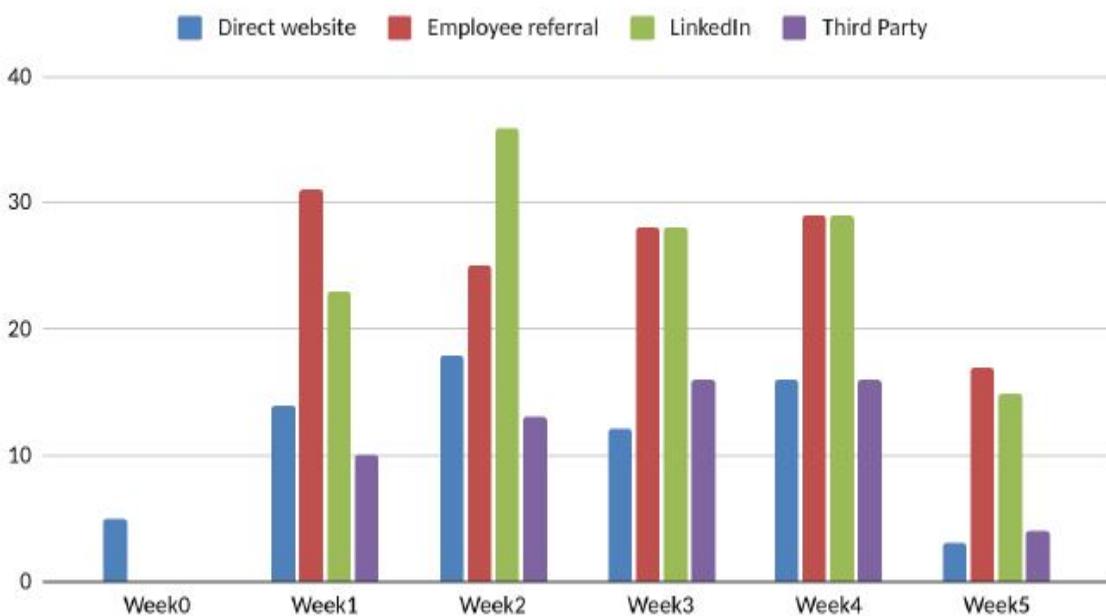
Correct Marks : 1

Question Label : Multiple Choice Question

The graph below indicates which of the following?

This graph is based on the HR manager's analysis of various job application channels. Please answer based on the graph only.

Weekly application count



Options :

6406531175102. ❌ Third Party and Direct Website Advertisements contribute to the least application receipt per unit cost.

6406531175103. ❌ Employee Referral is the most preferred channel of application receipt

6406531175104. ❌ The likelihood of a candidate getting selected is higher when he applies through LinkedIn rather than the employer's Direct Website

6406531175105. ✓ LinkedIn fares better than Third Party Sources in application receipt

Question Number : 274 Question Id : 640653354319 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is not an actionable inference from A/B Testing?

Options :

6406531175118. ❌ Understanding Purchase Behaviors of Customers

6406531175119. ✓ Deciding Stock Keeping Limits of Warehouses

6406531175120. ✗ Promoting specific products

6406531175121. ✗ Making UI/UX changes in the website

Question Number : 275 Question Id : 640653354321 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

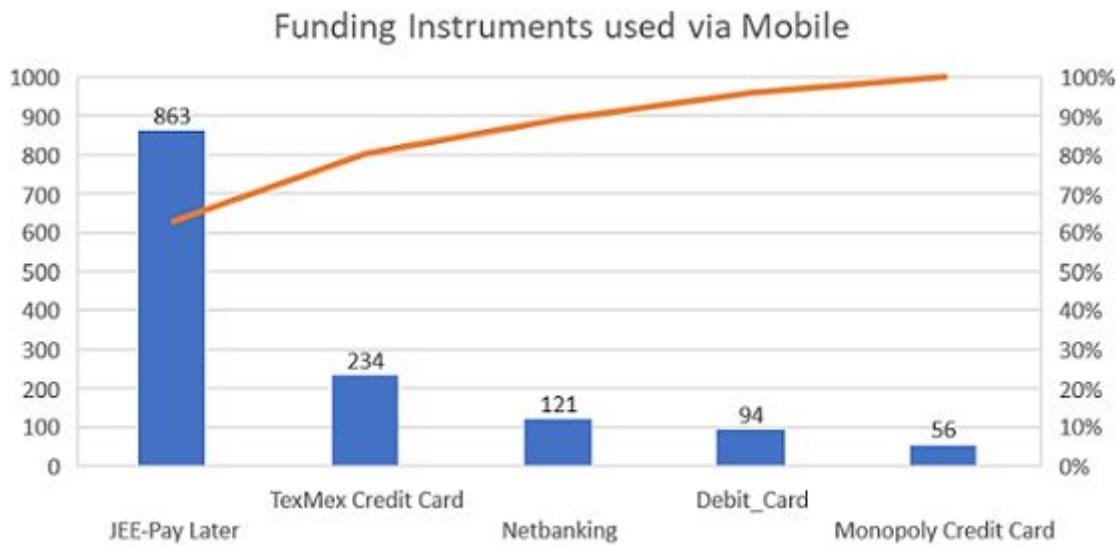
Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The following graph shows the distribution of Funding Instruments used on Mobile Devices by users for various purchases. State whether the following statement is True or False

Statement : *The chart follows the Pareto Principle.*



Options :

6406531175126. ✓ FALSE

6406531175127. ✗ TRUE

Question Number : 276 Question Id : 640653354322 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Point out the drawback of BNPL (Buy Now Pay Later) for companies.

Options :

6406531175128. ✘ It increases the level of engagement of customers

6406531175129. ✘ Enables Cash-Strapped millennials to make purchases

6406531175130. ✓ Increases prospects of defaulting by customer

6406531175131. ✘ Shift's user's loyalty away from the competition

Question Number : 277 Question Id : 640653354323 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If a FinTech company wants to cut down losses, which of the following should they do?

Options :

6406531175132. ✘ Decrease approval cutoff of credit score

6406531175133. ✘ Increase approval limit for loans

6406531175134. ✓ Increase approval cutoff of credit score

6406531175135. ✘ Give more loans

Sub-Section Number : 3

Sub-Section Id : 64065351175

Question Shuffling Allowed : Yes

Question Number : 278 Question Id : 640653354282 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Why is the quick ratio a more rigorous test of short-term solvency than the current ratio? (Choose all that are applicable)

Options :

6406531175000. ✓ The quick ratio considers only cash and marketable securities as current assets
6406531175001. ✗ The quick ratio eliminates prepaid expenses for the numerator
6406531175002. ✗ The quick ratio eliminates prepaid expenses for the denominator
6406531175003. ✓ The quick ratio eliminates inventories from the numerator

Question Number : 279 Question Id : 640653354291 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Which of the following statement(s) is/are true (choose all that is applicable)

Options :

6406531175013. ✓ Cross Price Elasticity and Income Elasticity both measure shift in demand curve
6406531175014. ✗ Cross Price Elasticity and Income Elasticity both measure movement along demand curve
6406531175015. ✗ Cross Price Elasticity measures shift in demand curve and Income Elasticity measure movement along demand curve
6406531175016. ✗ Cross Price Elasticity measure movement along demand curve and Income Elasticity both measure shift in demand curve

Question Number : 280 Question Id : 640653354295 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Which of the following options is/are correct? (Multi-Select)

If you increase the production volume:

Options :

6406531175029. ✓ The capacity utilization is increased
6406531175030. ✗ The capacity utilization is decreased

6406531175031. ❌ ROCE is decreased

6406531175032. ✓ ROCE is increased

Question Number : 281 Question Id : 640653354300 Question Type : MSQ Is Question

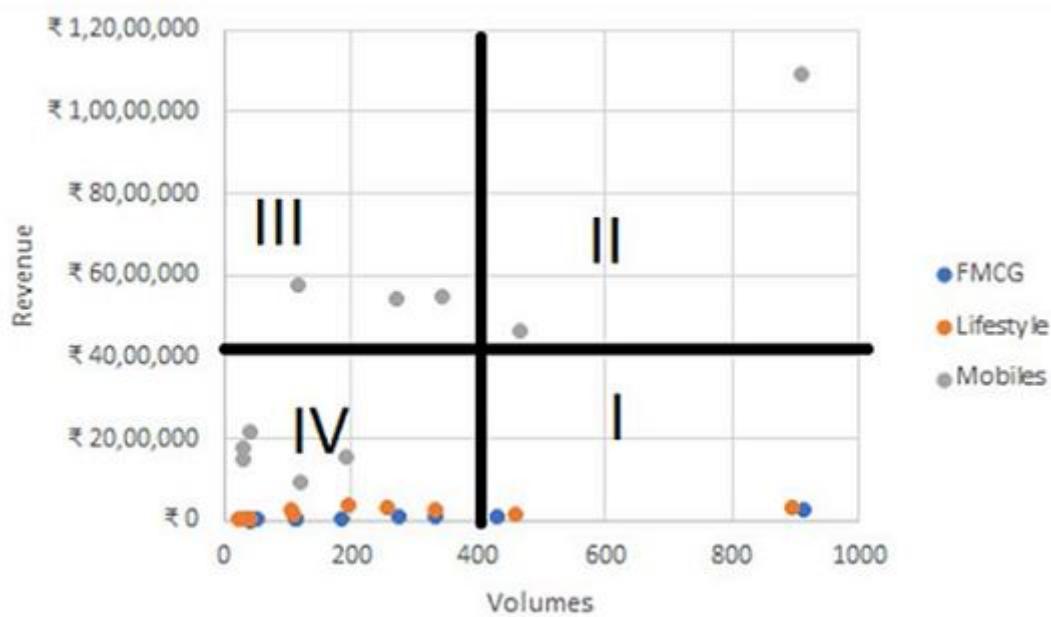
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

From the following Figure and options, which quadrant products will be placed in the secure area?

- Select all that apply



Options :

6406531175049. ❌ I

6406531175050. ✓ II

6406531175051. ✓ III

6406531175052. ❌ IV

Question Number : 282 Question Id : 640653354301 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Increase in which of the following items reduces the Net Margin? Choose all that apply

Options :

6406531175053. ✘ Revenue

6406531175054. ✓ Direct Material Cost

6406531175055. ✓ Direct Labour Cost

6406531175056. ✓ Shipping Cost

6406531175057. ✓ Tax on the Manufactured Product

Question Number : 283 Question Id : 640653354302 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Enterprise Resource Planning (ERP) enables the integration of which of the following domains?

Choose all that apply

Options :

6406531175058. ✓ Sales and Marketing

6406531175059. ✓ Operations

6406531175060. ✓ Human Resources

6406531175061. ✓ Logistics

Question Number : 284 Question Id : 640653354310 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

In which recruiting process(es) would an HR manager be dealing with qualitative (subjective) data?

Choose all that apply

Options :

6406531175086. ✓ resume shortlisting

6406531175087. ✓ job planning

6406531175088. ✗ interview scheduling

6406531175089. ✓ interview

Question Number : 285 Question Id : 640653354311 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Which parameters would be useful during a typical “Resume Shortlisting” exercise? Choose all that apply

Options :

6406531175090. ✓ Last drawn Salary

6406531175091. ✓ Skill set of the Employee

6406531175092. ✓ Years of Work Experience

6406531175093. ✗ Hobbies of the Employee

Question Number : 286 Question Id : 640653354320 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

From a Credit approver’s perspective, who among the following would be allowed to draw a credit for purchases?

Options :

6406531175122. ✓ Person B with High credit score, with low engagement with the platform

6406531175123. ✓ Person C with Average Credit Score, with High Engagement with the platform

6406531175124. ✗ Person A with low credit score with low engagement with the platform

6406531175125. ✗ Person D with maximum number of credit cards with no credit score

Sub-Section Number :

4

Sub-Section Id :

64065351176

Question Shuffling Allowed :

Yes

Question Number : 287 Question Id : 640653354281 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

A straight-line demand curve with slope of -1 intersects the horizontal axis at 100 tons per week At the midpoint of the demand curve (corresponding to 50 tons per week) the price elasticity of demand is __

(Hint: The demand curve is moving from the mid-point to the point on the horizontal axis)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

-1

Sub-Section Number : 5

Sub-Section Id : 64065351177

Question Shuffling Allowed : No

Question Id : 640653354283 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (288 to 289)

Question Label : Comprehension

The data for producing a product is provided in the Table below Using this information, answer the given subquestions

| Total Fixed cost (Rs.) | Variable cost per unit (Rs./ unit) | Number of units produced (units) |
|---------------------------|---------------------------------------|-------------------------------------|
| 15 | 0 | 0 |
| 15 | 3 | 10 |
| 15 | 5 | 14 |
| 15 | 5 | 19 |
| 15 | 4 | 21 |
| 15 | 2 | 32 |

Sub questions

Question Number : 288 Question Id : 640653354284 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the point (in terms of number of units to be produced in the given table) where the production should be located?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

32

Question Number : 289 Question Id : 640653354285 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Why do you choose the previous point (choose all that is applicable)?

Options :

6406531175005. ✘ Because, fixed cost is constant at all points

6406531175006. ✘ Because it is point where the marginal cost is minimum

6406531175007. ✘ Because it is the point where the profit is maximum

6406531175008. ✓ None of these

Question Id : 640653354303 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (290 to 292)

Question Label : Comprehension

Please answer the given subquestions on the Overall Equipment Effectiveness of fasteners manufacturing.

Hint:

Just in case you forgot the formula

Availability = Run Time / Planned Production Time

Run Time = Planned Production Time – Lost Time

Performance = (Total Count / Run Time) / Ideal Run Rate

Quality = Good Count / Total Count

OEE = Availability × Performance × Quality

Sub questions

Question Number : 290 Question Id : 640653354304 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

In a factory that manufactures fasteners, the bolt manufacturing process went out of control only in terms of the number of scraps produced. Which factor(s) of Overall Equipment Effectiveness (OEE) will be affected?

a) availability, b) performance, c) quality

Options :

6406531175062. ❌ only b

6406531175063. ✓ only c

6406531175064. ✗ b and c

6406531175065. ✗ only a

Question Number : 291 Question Id : 640653354305 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Calculate the OEE of the Bolt Manufacturing Equipment

| Parameters | Week 1 |
|---|--------|
| Planned Production Hours (PPH) | 100 |
| Lost Time (LOT) | 16 |
| Designed Gear Output Speed from Equipment (DO) per Hour | 60 |
| Total Product Output | 4650 |
| Scrap (S) | 143 |

Hint: Choose the closest Answer

Options :

6406531175066. ✗ 0.83

6406531175067. ✓ 0.75

6406531175068. ✗ 0.90

6406531175069. ✗ Insufficient Information

Question Number : 292 Question Id : 640653354306 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

An 8-hour no downtime shift has an OEE of 0.90 performing at its designed speed and produces a total scrap of 90 units. What is the total number of units produced in the shift?

Options :

6406531175070. ✘ 810

6406531175071. ✘ 9000

6406531175072. ✓ 900

6406531175073. ✘ Insufficient Information

Question Id : 640653354315 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (293 to 295)

Question Label : Comprehension

Company HiringSoft wants to recruit Software Engineers for its new project. The hiring manager was tasked with choosing the appropriate hiring channel. The manager collected previous hiring data (provided in the table below) to help narrow down the appropriate channel. All channels advertised for the vacant positions on the same day.

| Recruitment Channels | Application Received in 14 days | Application Shortlisted | No. of Candidates appeared for Interview | No. of Candidates Selected | Cost of Advertisement for 14 Days (INR) |
|-------------------------------|---------------------------------|-------------------------|--|----------------------------|---|
| Employee Referrals | 40 | 32 | 24 | 12 | 120000 |
| Direct Company Website | 60 | 12 | 8 | 2 | 5000 |
| Social and Professional Media | 260 | 36 | 16 | 4 | 20000 |
| Hiring Portals | 220 | 90 | 30 | 6 | 100000 |
| Print Ads | 20 | 10 | 8 | 1 | 5000 |

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 293 Question Id : 640653354316 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which channel has the best shortlist success rate? The Shortlist success rate is defined as the shortlisted applications to applications received.

Options :

6406531175106. ❌ Hiring Portals

6406531175107. ❌ Social and Professional Media

6406531175108. ❌ Print Ads

6406531175109. ✓ Employee Referrals

Question Number : 294 Question Id : 640653354317 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If the hiring manager has to go only with the parameter, cost per candidated selected, which would be the most appropriate channel?

Options :

6406531175110. ✓ Direct Company Website

6406531175111. ❌ Print Ads

6406531175112. ❌ Employee Referrals

6406531175113. ❌ Social and Professional Media

Question Number : 295 Question Id : 640653354318 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which channel has the worst selection success rate? The Selection success rate is defined as the no. of candidates selected to the no. of applications shortlisted.

Options :

6406531175114. ❌ Social and Professional Media

6406531175115. ❌ Print Ads

6406531175116. ✓ Hiring Portals

6406531175117. ❌ Employee Referrals

Sub-Section Number : 6

Sub-Section Id : 64065351178

Question Shuffling Allowed : No

Question Id : 640653354286 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (296 to 299)

Question Label : Comprehension

The below table provides the consolidated values of a company-X's financial performance (ignore all other non-mentioned financial parameters) Using this, answer the given subquestions

| Particular | Rs. |
|--------------------------|--------|
| Current assets | 320000 |
| Current liabilities | 140000 |
| Total value of inventory | 140000 |
| Fixed expenses | 120000 |
| Gross profit earned | 130000 |
| Total sales achieved | 250000 |

Sub questions

Question Number : 296 Question Id : 640653354287 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

What is the gross profit margin (in %) for company-X (round to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

51 to 53

Question Number : 297 **Question Id :** 640653354288 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

What is the net profit for company-X?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10000

Question Number : 298 **Question Id :** 640653354289 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

What is the current ratio for company-X (round to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

2.10 to 2.30

Question Number : 299 Question Id : 640653354290 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

What is the quick ratio for company-X (round to two decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1.10 to 1.30

Business Analytics

| | |
|---|-------------|
| Section Id : | 64065322253 |
| Section Number : | 9 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 18 |
| Number of Questions to be attempted : | 18 |
| Section Marks : | 55 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |

Sub-Section Id :

64065351179

Question Shuffling Allowed :

No

Question Number : 300 Question Id : 640653354324 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: BUSINESS ANALYTICS"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175136. ✓ Yes

6406531175137. ✗ No

Sub-Section Number :

2

Sub-Section Id :

64065351180

Question Shuffling Allowed :

Yes

Question Number : 301 Question Id : 640653354349 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A leading European two-wheeler manufacturer is trying to build an ideal scooter for the Indian market. Which of the following tools will help him understand: how important the attributes such as Engine Capacity, LED Lights, Fuel Efficiency, and Smart Connect Technology are to the customers?

Options :

6406531175185. ✗ Data Envelopment Analysis

6406531175186. ✓ Conjoint Analysis

6406531175187. ❌ Chi-Square test

6406531175188. ❌ Both Data Envelopment Analysis & Chi-Square test

Sub-Section Number : 3

Sub-Section Id : 64065351181

Question Shuffling Allowed : Yes

Question Number : 302 Question Id : 640653354340 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Suppose you conduct a chi-squared test of independence on the categorical variables cities and brand preferences at the significance level 0.1. You obtain a p-value of 0.05. What will you conclude?

Options :

6406531175164. ❌ Reject the null hypothesis and conclude that the categorical variables are independent

6406531175165. ✓ Reject the null hypothesis and conclude that the categorical variables are not independent

6406531175166. ❌ Fail to reject the null hypothesis and conclude that the categorical variables are independent

6406531175167. ❌ Fail to reject the null hypothesis and conclude that the categorical variables are not independent

Question Number : 303 Question Id : 640653354346 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

There are 4 business units. Using the DEA, you solve the LP for all the four business units and find the efficiencies for these units. The efficiency is denoted by E. For these units, $E_1 = 0.92$, $E_2 = 0.89$,

E3 = 1, E4 = 0.91. Which of these units are efficient?

Options :

6406531175176. ✘ 1

6406531175177. ✘ 2

6406531175178. ✓ 3

6406531175179. ✘ 4

Question Number : 304 Question Id : 640653354351 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Which of the following is not a form of conjoint analysis?

Options :

6406531175193. ✘ Choice based

6406531175194. ✘ Adaptive based

6406531175195. ✘ Full profile

6406531175196. ✓ Selective attribute type

6406531175197. ✘ Menu-based

Question Number : 305 Question Id : 640653354352 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

In a conjoint problem with 4 products and 2 attributes, how many pair-wise preferences are possible?

Options :

6406531175198. ✘ 8

6406531175199. ✓ 6

6406531175200. ✘ 16

6406531175201. ✘ 12

Question Number : 306 Question Id : 640653354353 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Let's say a customer wants to buy a car and has 3 brands to choose from; 2 engine options; and 3 type of gear boxes. How many options will the customer rate or rank for performing the conjoint analysis?

Options :

6406531175202. ✓ 18

6406531175203. ✘ 27

6406531175204. ✘ 54

6406531175205. ✘ 72

Sub-Section Number : 4

Sub-Section Id : 64065351182

Question Shuffling Allowed : Yes

Question Number : 307 Question Id : 640653354331 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Say a data is distributed as "Normal" with a right tail. If it is compared with an "Symmetric Normal" distribution, then which of the following states is/ are true (choose all that is applicable)

Options :

6406531175152. ✘ In a "P-P plot", the data will fall on a line which is indicate at 45-degree to the X-axis

6406531175153. ✓ In a "Q-Q plot", the data will fall on a line which is indicate at 45-degree to the

X-axis

6406531175154. ✓ In a “P-P plot”, the data will not entirely fall on a line which is indicate at 45-degree to the X-axis

6406531175155. ✗ In a “Q-Q plot”, the data will not entirely fall on a line which is indicate at 45-degree to the X-axis

6406531175156. ✗ Cannot use P-P plot or Q-Q plot as the assumed distribution is discrete

Question Number : 308 Question Id : 640653354342 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

There are 7 business units and you are using the DEA to compare them. You solve the LP for business unit 5. You find from the constraint expression that the business unit 3 has obtained an efficiency of 0.8 and the business unit 7 has obtained an efficiency of 0.9 with the optimal weights of business unit 5. Which of the following statements are correct?

Options :

6406531175169. ✓ Business unit 3 may be inefficient

6406531175170. ✗ Business unit 3 will be efficient

6406531175171. ✓ Business unit 7 may be inefficient

6406531175172. ✗ Business unit 7 will be efficient

Question Number : 309 Question Id : 640653354350 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

What is the format of data needed for performing the conjoint analysis using the Statistical or Linear Regression Approach?

Options :

6406531175189. ✓ Consumer Choice Data is Ranking or Ratings

6406531175190. ✘ Consumer Choice Data is Pairwise Comparison

6406531175191. ✘ Value of the attributes are continuous

6406531175192. ✓ Value of the product attributes are categorical

Sub-Section Number : 5

Sub-Section Id : 64065351183

Question Shuffling Allowed : Yes

Question Number : 310 Question Id : 640653354341 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

You have estimated the demand to follow the following relationship: $D(p)=100 - 20*p$. Now, you intend to maximize the revenue $R(p)=D(p)*p$. You find the first derivative of $R(p)$ with respect to p , equate it to 0 and find p^* . What is the value of p^* ?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

2.4 to 2.6

Sub-Section Number : 6

Sub-Section Id : 64065351184

Question Shuffling Allowed : Yes

Question Number : 311 Question Id : 640653354344 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

In a multiple linear regression with 3 explanatory variables, you find that R-squared value is 0.75.

The number of observations is 25. What is the value of adjusted R-squared?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.66 to 0.76

Question Number : 312 **Question Id :** 640653354348 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3

Question Label : Short Answer Question

You are conducting a multiple linear regression with sales as the dependent variable. Price, quantity and rating score are the independent variables. In the multiple linear regression, you find that the direct effect of price on sales is 0.3, the direct effect of quantity on sales is 0.2 and the direct effect of rating score on sales is 0.4. And, you also know that the effect of price on quantity is 0.2 and the effect of price on rating score is 0.1. What is the total effect of price on sales?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.36 to 0.40

Sub-Section Number : 7

Sub-Section Id : 64065351185

Question Shuffling Allowed : Yes

Question Number : 313 **Question Id :** 640653354347 **Question Type :** MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

You solve the primal of a linear program with maximization objective, three decision variables and two constraints of the less than or equal to type. Non-negativity restrictions apply on the decision variables. After solving the linear program, you find that the first constraint is not binding ($\text{lhs} < \text{rhs}$) and the second constraint is not binding ($\text{lhs} < \text{rhs}$). Which of the following statements are correct?

Options :

6406531175180. ❌ There are three decision variables in the dual

6406531175181. ✓ The dual variable corresponding to the first constraint is zero

6406531175182. ❌ There are four decision variables in the dual

6406531175183. ✓ The dual variable corresponding to the second constraint is zero

Sub-Section Number : 8

Sub-Section Id : 64065351186

Question Shuffling Allowed : Yes

Question Number : 314 Question Id : 640653354343 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

There are 6 business units. There are two outputs and one input under consideration. You are solving the optimization problem for business unit 3 and find that the efficiency is 0.7. You find that the dual variables corresponding to the constraints of business units 4 and 5 are non-zero and the dual variables corresponding to the constraints of other units are zero. The dual variables corresponding to the constraints of business units 4 and 5 are 0.3 and 0.4 respectively. You are given the following table where sales and number of leads are the two outputs.

| | Sales | Number of leads |
|-----------------|-------|-----------------|
| Business unit 4 | 8500 | 10 |
| Business unit 5 | 8200 | 12 |

What is the sales in HCU 3?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

8325 to 8335

Question Number : 315 Question Id : 640653354345 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

You are conducting a multiple linear regression with sales as the dependent variable. Price, quantity and rating score are the independent variables. In order to calculate the VIF for the variable quantity, you implement a linear regression with quantity as the dependent variable and other variables as independent variables and obtain R-squared of 0.6. What is the VIF for the variable quantity?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

2.4 to 2.6

Sub-Section Number : 9

Sub-Section Id : 64065351187

Question Shuffling Allowed : No

Question Id : 640653354325 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (316 to 320)

Question Label : Comprehension

Ms. X is working is with the data given in Table-1 below. Using this information answer the given subquestions

| Product | Sales of a Product in a City for a given Year | | | | | | | | |
|---------|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | City-1 (1990) | City-2 (1990) | City-3 (1990) | City-1 (1991) | City-2 (1991) | City-3 (1991) | City-1 (1992) | City-2 (1992) | City-3 (1992) |
| A | 100 | 90 | 250 | 120 | 50 | 120 | 140 | 20 | 500 |
| B | 145 | 300 | 500 | 175 | 250 | 250 | 195 | 230 | 1000 |
| C | 90 | 180 | 30 | 100 | 110 | 15 | 110 | 95 | 58 |
| D | 130 | 220 | 132 | 140 | 200 | 61 | 150 | 180 | 270 |

Table-1

Sub questions

Question Number : 316 Question Id : 640653354326 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If X wants visualize how the sales of a product has changed over the years in the different cities, then which visualization would be most appropriate?

Options :

6406531175138. ✓ Line graph for each product's sales over the years for each city

6406531175139. ✗ Line graph for each city's sale over the years for each product

6406531175140. ✗ Line graph for each year's sale for every product in each city

6406531175141. ✗ Pie chart for each product's sales in the year 1992 for each city

6406531175142. ✗ Pie chart for each city's sales in the year 1992

6406531175143. ✗ The given table data with columns re-arranged as specified below

| Product | Sales of a Product in a City for a given Year | | | | | | | | |
|---------|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | City-1 (1990) | City-1 (1991) | City-1 (1992) | City-2 (1990) | City-2 (1991) | City-2 (1992) | City-3 (1990) | City-3 (1991) | City-3 (1992) |

Question Number : 317 Question Id : 640653354327 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If Ms. X has created the below visualization (Figure-1) for the data of product-A in Table-1. **What is the primary message** that is conveyed through this?

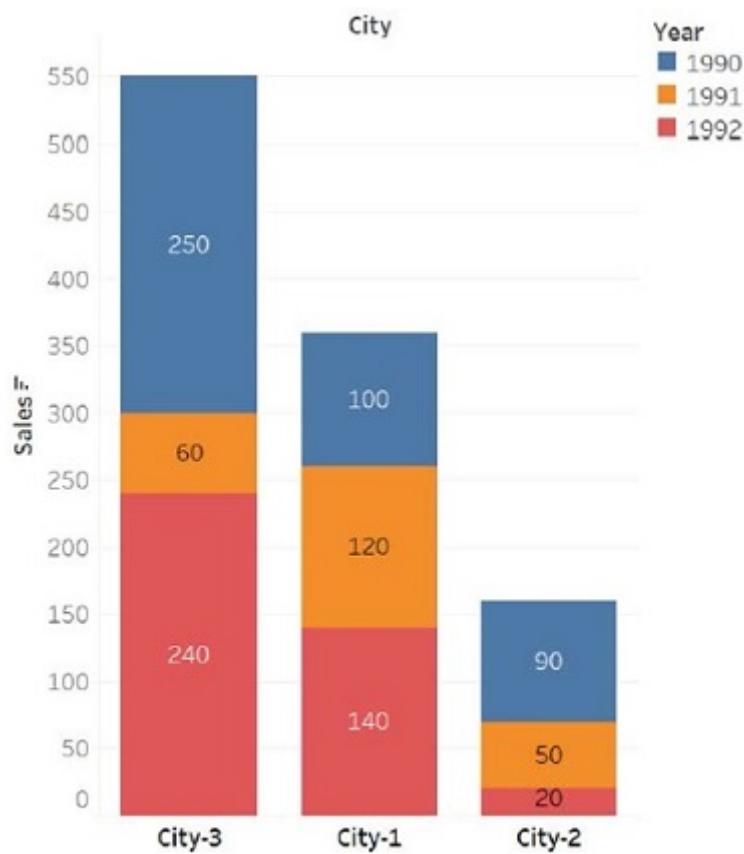


Figure-1

Options :

- 6406531175144. ✘ City-3 has the highest sales for the product-A in the current year
- 6406531175145. ✘ The sales of Product-A is constantly fluctuating over the years
- 6406531175146. ✘ The sales of Product-A is drastically different across cities in any given year
- 6406531175147. ✓ The sales of product-A in city-2 is lowest among all the cities in any given year

6406531175148. ✘ None of these

Question Number : 318 Question Id : 640653354328 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Say you want to see if the distribution of sales of Product-A in the Table-1 follows a uniform distribution within the range of 0 to 300 when split into bins as specified in Table-2. Then what is the expected frequency in any given bin (round your answer to two decimal places)?

| Bin Number | Bin Range |
|------------|--|
| Bin-1 | Sales value less than or equal to 50 |
| Bin-2 | Sales value greater than 50 but less than or equal to 100 |
| Bin-3 | Sales value greater than 100 but less than or equal to 150 |
| Bin-4 | Sales value greater than 150 but less than or equal to 200 |
| Bin-5 | Sales value greater than 200 but less than or equal to 250 |
| Bin-6 | Sales value greater than 250 but less than or equal to 300 |

Table-2

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1.5

Question Number : 319 Question Id : 640653354329 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

If a Chi-Square Goodness-Of-Fit Test to check if the data for Product-A in Table-1 follows a Uniform Distribution with bins as specified in Table-2, then what is the value of the Test statistic (round your answer to two decimal places)?

$$\{ \text{Hint: Chi-square} = \sum_k \frac{(observed_k - Expected_k)^2}{Expected_k} \}$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

3.50 to 3.70

Question Number : 320 **Question Id :** 640653354330 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Short Answer Question

A Chi-squared Goodness-Of-Fit test with the bins as specified in Table-2 is going to be carried out to check if the data on sales (whole data in Table-1) is normal or not. Then what is the degrees of freedom for the test?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Id : 640653354332 **Question Type :** COMPREHENSION **Sub Question Shuffling**

Allowed : No Group Comprehension Questions : No **Calculator :** None **Response Time :** N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (321 to 327)

Question Label : Comprehension

A logistic model has been fit for a data set with the goal to predict the positive class (Y=1). The confusion matrix obtained for this model on the test dataset is provided in Table-3. Using this, answer the given subquestions

| Actual | Predictions | |
|--------|-------------|----|
| | 1 | 0 |
| 1 | 11 | 45 |
| 0 | 77 | 23 |

Table-3

Sub questions

Question Number : 321 Question Id : 640653354333 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

How many "True Positives" is the model predicting?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

11

Question Number : 322 Question Id : 640653354334 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

How many “False Positives” is the model predicting?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

77

Question Number : 323 **Question Id :** 640653354335 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

How many “True Negatives” is the model predicting?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

23

Question Number : 324 **Question Id :** 640653354336 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

How many “False Negatives” is the model predicting?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

45

Question Number : 325 **Question Id :** 640653354337 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1

Question Label : Short Answer Question

What is the accuracy for the model (enter only the numerical value in percentage, without the "%" symbol and round it to two decimal places)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

21.00 to 22.00

Question Number : 326 **Question Id :** 640653354338 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Short Answer Question

What is the recall for the model when predicting the negative class (enter only the numerical value in percentage, without the "%" symbol and round it to two decimal places)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

22.80 to 23.20

Question Number : 327 Question Id : 640653354339 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the precision for the model when predicting the positive class (enter only the numerical value in percentage, without the "%" symbol and round it to two decimal places)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

12.00 to 13.00

DBMS

| | |
|--|-------------|
| Section Id : | 64065322254 |
| Section Number : | 10 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 26 |
| Number of Questions to be attempted : | 26 |
| Section Marks : | 50 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and | Yes |
| Clear Response : | |

| | |
|-------------------------------------|-------------|
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351188 |
| Question Shuffling Allowed : | No |

Question Number : 328 Question Id : 640653354354 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: DATABASE MANAGEMENT SYSTEMS"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175206. ✓ Yes

6406531175207. ✗ No

| | |
|-----------------------------|---|
| Sub-Section Number : | 2 |
|-----------------------------|---|

| | |
|-------------------------|-------------|
| Sub-Section Id : | 64065351189 |
|-------------------------|-------------|

| | |
|-------------------------------------|-----|
| Question Shuffling Allowed : | Yes |
|-------------------------------------|-----|

Question Number : 329 Question Id : 640653354358 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Consider the relation $R(A, B, C, D, E)$ and the functional dependencies set

$$\mathcal{F} = \{AD \rightarrow E, B \rightarrow D, BC \rightarrow A, E \rightarrow A, AB \rightarrow C, AC \rightarrow B\}.$$

Let $R1(A, B, C, E)$ be the one of the decomposed relation. Find out the number of candidate keys applicable to $R1(A, B, C, E)$.

Options :

6406531175221. ✘ 1

6406531175222. ✓ 2

6406531175223. ✘ 3

6406531175224. ✘ 4

Question Number : 330 Question Id : 640653354363 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A role **Department_Lead** has the privilege of delete and update on all the tables of the database.

A new role **Employee1** is created, and the following statement is executed.

```
grant Department_Lead to Employee1
```

What privileges will be inherited by **Employee1**?

Options :

6406531175242. ✘ All privileges - select, insert, delete and update

6406531175243. ✘ Only select

6406531175244. ✓ Only delete and update

6406531175245. ✘ Only select and insert

Question Number : 331 Question Id : 640653354364 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Consider the following statements:

Statement 1: In case a transaction is not completely executed due to logical errors, the redo operation is used for transaction rollback.

Statement 2: A transaction T_1 needs to be undone, if it contains the record $\langle T_1, \text{start} \rangle$ and also contains the record $\langle T_1, \text{commit} \rangle$.

Statement 3: A transaction T_1 needs to be redone, if it contains the record $\langle T_1, \text{start} \rangle$, but does not contain the record $\langle T_1, \text{commit} \rangle$.

Statement 4: When a transaction T_1 finishes its last statement successfully, the log record $\langle T_1, \text{commit} \rangle$ is written.

Which among the given statements is/are correct?

Options :

6406531175246. ✘ Only statement 1

6406531175247. ✘ Statement 2 & 3

6406531175248. ✘ Statement 1 & 4

6406531175249. ✓ Only statement 4

Question Number : 332 Question Id : 640653354372 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Consider a relational schema **student**(*roll_no, name, class*).

In order to insert a record in student table, which of the following category of SQL command is used for this purpose?

Options :

6406531175275. ✓ DML

6406531175276. ✘ TCL

6406531175277. ✘ DDL

6406531175278. ✘ DCL

Sub-Section Number : 3

Sub-Section Id : 64065351190

Question Shuffling Allowed : Yes

Question Number : 333 Question Id : 640653354360 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the relation $\text{students}(roll_no, name, course, section, department)$ having functional dependencies

$$\mathcal{F} = \{roll_no \rightarrow name, \\ roll_no \rightarrow section, department \\ course \rightarrow department\}$$

If the relation students is decomposed into $\text{student_dept}(roll_no, course, section, department)$ and $\text{student_info}(roll_no, name)$

Then, choose the appropriate SQL query to create student_dept and student_info tables.

Options :

CREATE TABLE student_dept (roll_no varchar(10), course varchar(10),
section varchar(10), department varchar(10), primary key (roll_no, course))

CREATE TABLE student_info(roll_no varchar(10),

6406531175230. ✘ name varchar(10), primary key (roll_no, name))

CREATE TABLE student_dept (roll_no varchar(10), course varchar(10),
section varchar(10), department varchar(10), primary key (course))

CREATE TABLE student_info(roll_no varchar(10) primary key,

6406531175231. ✘ name varchar(10))

CREATE TABLE student_dept (roll_no varchar(10), course varchar(10),
section varchar(10), department varchar(10), primary key (roll_no))

CREATE TABLE student_info(roll_no varchar(10) primary key,

6406531175232. ✘ name varchar(10))

CREATE TABLE student_dept (roll_no varchar(10), course varchar(10),
section varchar(10), department varchar(10), primary key (roll_no, course))

CREATE TABLE student_info(roll_no varchar(10) primary key,

6406531175233. ✓ name varchar(10))

Question Number : 334 Question Id : 640653354361 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the relation **players**(Name, Team, Coach, Runs) with the data:

| Name | Team | Coach | Runs |
|--------|------|------------|------|
| Sharma | CSK | Steven | 99 |
| Sharma | MI | Mahela | 50 |
| Sharma | MI | Mahela | 99 |
| Sharma | CSK | Steven | 50 |
| Khan | RCB | S K Joseph | 45 |
| Khan | GT | Matthew | 80 |
| Khan | GT | Matthew | 45 |
| Khan | RCB | S K Joseph | 80 |

Table 1: players

Check whether the relation **players** is in 4NF or not. If not, then decomposed it into 4NF.

Choose the correct option.

Options :

| Name | Runs |
|--------|------|
| Sharma | 99 |
| Sharma | 50 |
| Khan | 45 |
| Khan | 80 |

6406531175234. ✓

Table 2: players1

| Name | Team | Coach |
|--------|------|------------|
| Sharma | CSK | Steven |
| Sharma | MI | Mahela |
| Khan | RCB | S K Joseph |
| Khan | GT | Matthew |

Table 3: players2

6406531175235. ✗

| Name | Team | Runs |
|--------|------|------|
| Sharma | CSK | 99 |
| Sharma | MI | 50 |
| Khan | RCB | 45 |
| Khan | GT | 80 |

Table 4: players1

| Team | Coach |
|------|------------|
| CSK | Steven |
| MI | Mahela |
| RCB | S K Joseph |
| GT | Matthew |

Table 5: players2

| Name | Team | Runs |
|--------|------|------|
| Sharma | CSK | 99 |
| Sharma | MI | 50 |
| Khan | RCB | 45 |
| Khan | GT | 80 |

Table 6: players1

| Name | Coach | Runs |
|--------|------------|------|
| Sharma | Steven | 99 |
| Sharma | Mahela | 50 |
| Khan | S K Joseph | 80 |
| Khan | Matthew | 45 |

Table 7: players2

6406531175236. *

6406531175237. * The relation players is in 4NF.

Question Number : 335 Question Id : 640653354362 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the given **grocery** table which represents the items purchased while grocery shopping

| grocery_item | quantity | value | discount |
|--------------|----------|-------|----------|
| Cereal | 3 | 450 | 10 |
| Chips | 5 | 200 | 5 |
| Milk | 2 | 300 | 0 |
| Banana | 10 | 350 | 5 |
| Tomato | 5 | 200 | 5 |

Figure 1: grocery

Which among the following query will fetch the output given below?

| grocery_item | discount |
|--------------|----------|
| Cereal | 10 |
| Milk | 0 |

Options :

SELECT grocery_item, discount
FROM grocery

6406531175238. ✘ WHERE quantity<=5 ORDER BY value

SELECT grocery_item, discount
FROM grocery

6406531175239. ✘ WHERE quantity>5 ORDER BY discount DESC

SELECT grocery_item, discount
FROM grocery

6406531175240. ✘ WHERE quantity>=5 ORDER BY quantity ASC

SELECT grocery_item, discount
FROM grocery

6406531175241. ✓ WHERE quantity<5 ORDER BY value DESC

Question Number : 336 Question Id : 640653354371 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following schedule **S** with four transactions T1, T2, T3, T4:

S: R3(A);W4(A);R2(A);W2(A);R4(B);R1(B);

Where, Ri(A) denotes a read operation by transaction Ti on a data item A, Wi(A) denotes a write operation by transaction Ti on a data item A.

What is the possible number of conflict serializable schedule of the above schedule **S**?

Options :

6406531175271. ✓ 4

6406531175272. ✗ 3

6406531175273. ✗ 1

6406531175274. ✗ 0

Question Number : 337 Question Id : 640653354373 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the given relations:

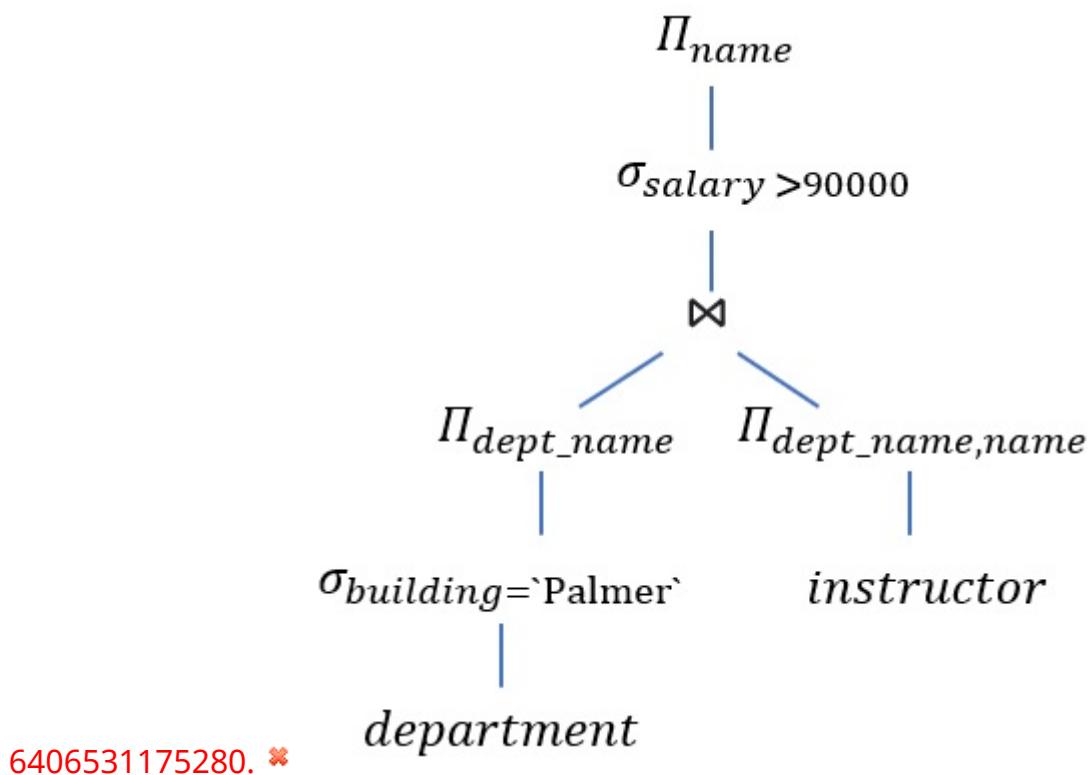
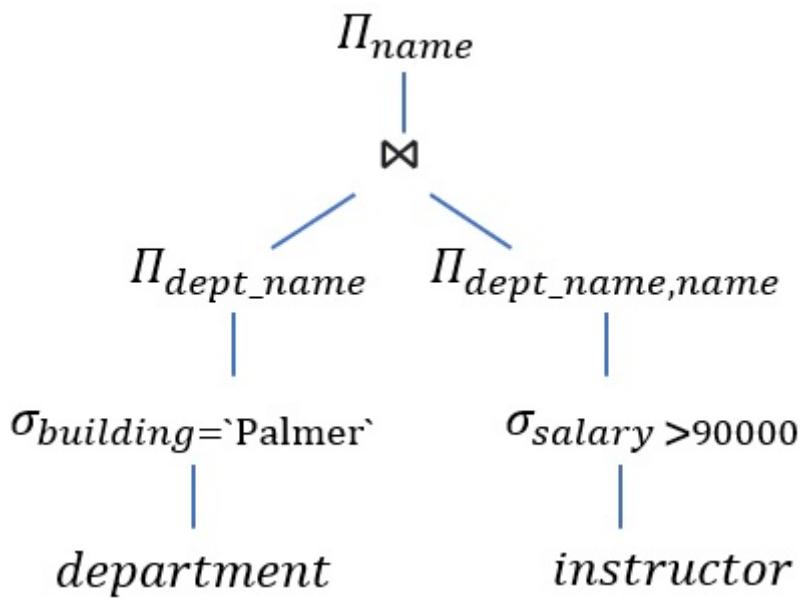
instructor(ID, name, dept_name, salary)

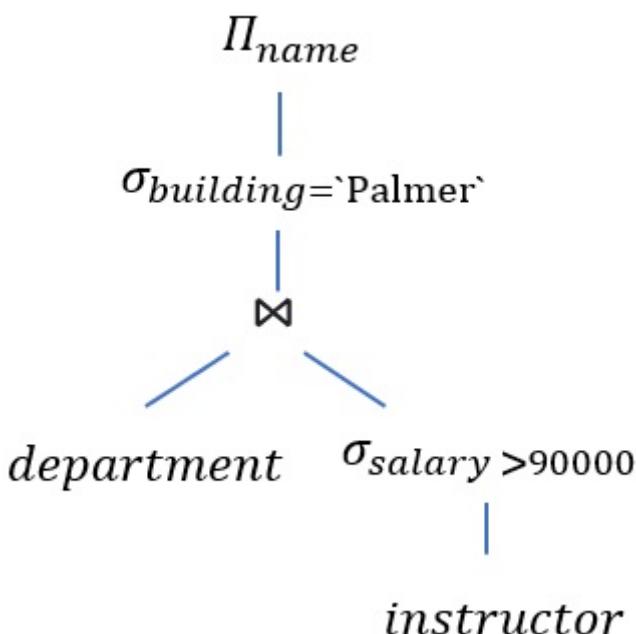
department(dept_name, building, budget)

Identify the most optimized expression tree from the given options that find the name of instructor whose salary is greater than 90000 and department building is 'Palmer'.

Options :

6406531175279. ✓





6406531175282. ✘ All of these expression trees are the same.

Question Number : 338 Question Id : 640653354374 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the relation **Car**(*Car_num_plate*, *Engine_num*, *Model*, *Make*, *Fuel_type*).

Construct a bitmap index for relation **Car** on the attribute *Fuel_type*. The number of records in the relation **Car** is **x**. The size of the bitmap index file is 1000 bytes. The attribute *Fuel_type* has 4 different values(i.e., Petrol, Diesel, CNG, Electric). The value of the **x** is

Options :

6406531175283. ✘ 250

6406531175284. ✘ 500

6406531175285. ✘ 1000

6406531175286. ✓ 2000

Question Number : 339 Question Id : 640653354376 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider a primary sparse index on the **instructor table**. The number of records in the instructor relation is 10000. The block size is 512 bytes. The record size is 32 bytes. The size of the search key is 16 bytes and the size of the block pointer is 14 bytes. The number of the blocks in the primary sparse indexing file is

Options :

6406531175288. ✘ 16

6406531175289. ✘ 36

6406531175290. ✓ 37

6406531175291. ✘ 625

Question Number : 340 Question Id : 640653354377 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the **smartphone** relation as shown below:

smartphone(IMEI, brand, color, price)

(Note: IMEI is the unique number of each smartphone.)

Construct a B tree indexing of order 8 using search key as IMEI. If the size of the block is 1024 bytes. IMEI attribute is of varchar datatype and size is 13 bytes. The size of the tree pointer is 64 bytes. The size of the record pointer of a non-leaf node of the B tree is

Options :

6406531175292. ✓ 60 bytes

6406531175293. ✘ 64 bytes

6406531175294. ✘ 73 bytes

6406531175295. ✘ 128 bytes

Sub-Section Number :

4

Sub-Section Id :

64065351191

Question Shuffling Allowed :

Yes

Question Number : 341 Question Id : 640653354355 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

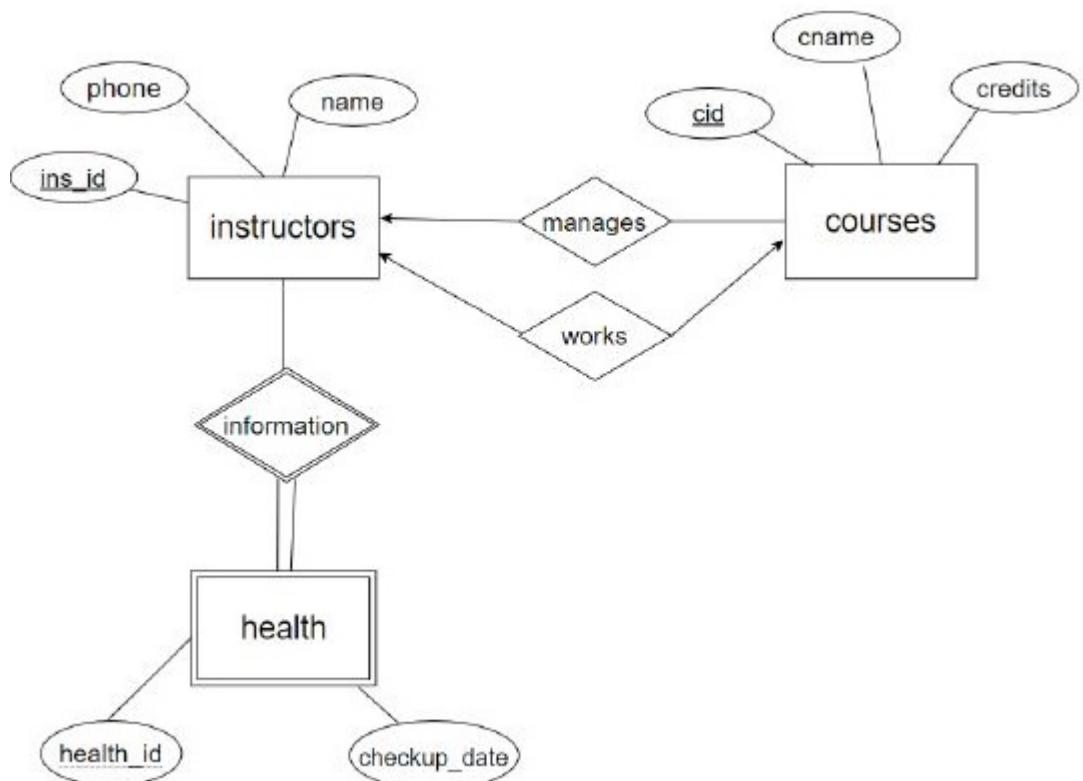
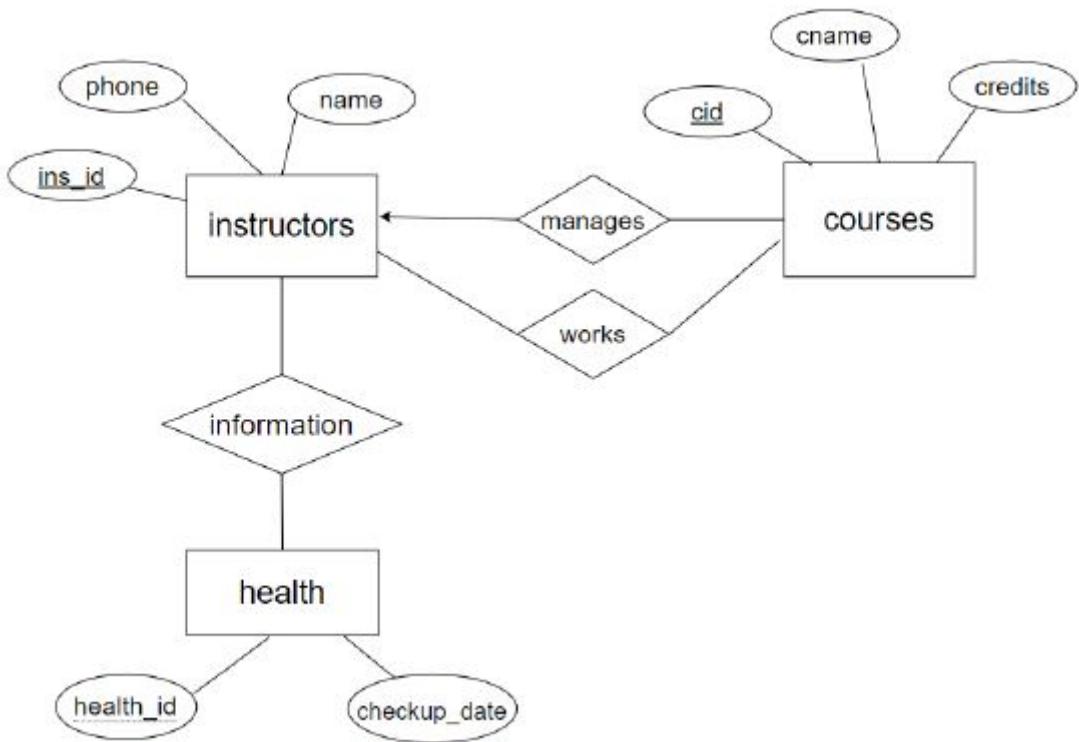
Question Label : Multiple Choice Question

Consider the following case study:

An IITM Online Degree Project needs a database to store information about instructors (identified by ins_id, name and phone as attributes), courses (identified by cid, cname and credits as attributes), and health information (identified by health_id and checkup_date as attributes). The instructor can work in various courses and courses can have more than one instructor; each course is managed by an instructor and an instructor can manage more than one courses. A health information must be identified uniquely by health_id when the instructor is known. We are not interested in information about a health record once the instructor leaves the organization. Choose the correct ER-Diagram based on the given information.

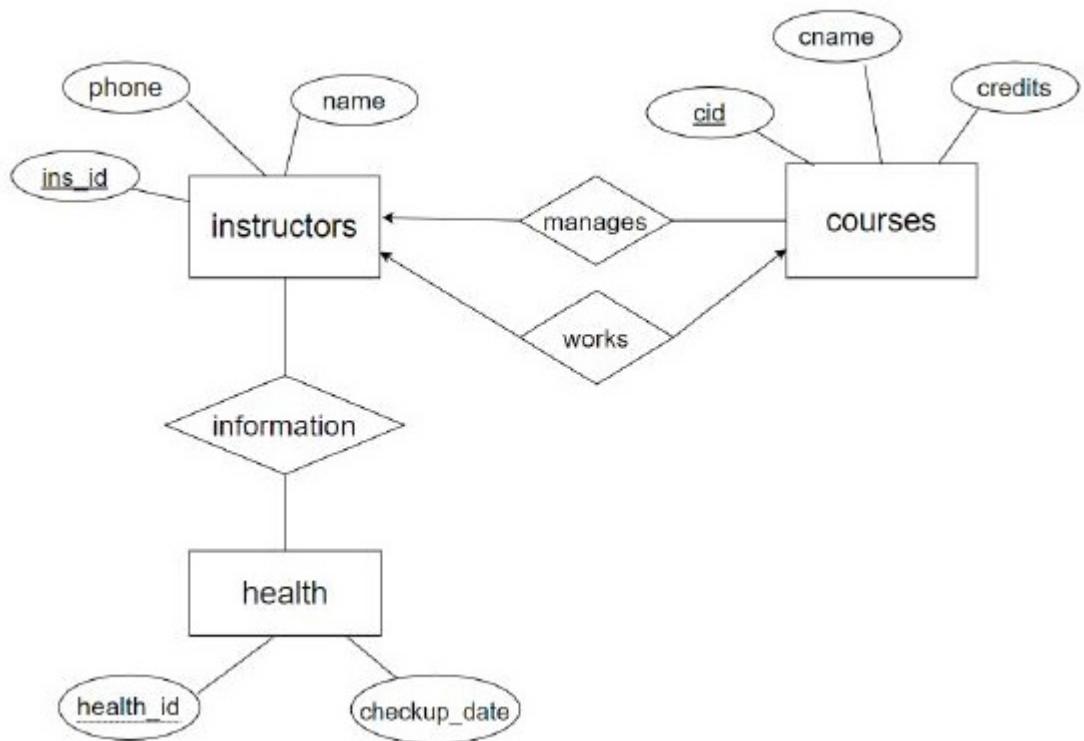
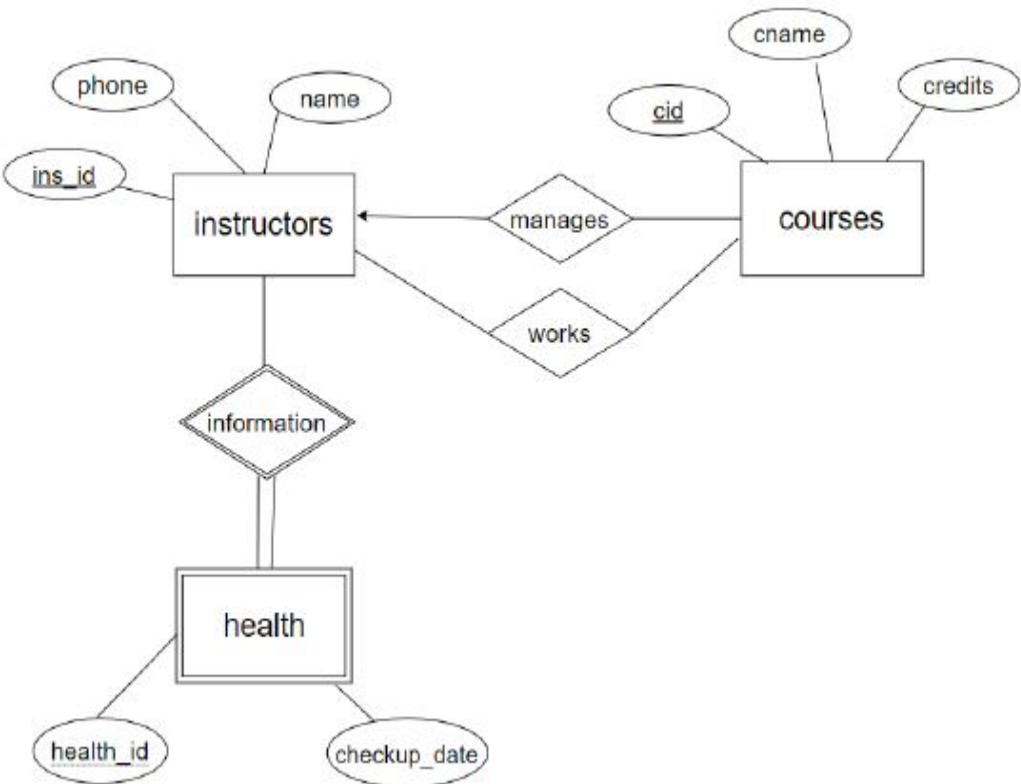
Options :

6406531175208. ❌



6406531175209. *

6406531175210. ✓



6406531175211. *

Question Number : 342 Question Id : 640653354366 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a RAID-4 system with 5 disks which stores the following data shown in Figure 3:

| Disk-1 | Disk-2 | Disk-3 | Disk-4 | Disk-5 | |
|--------|--------|--------|--------|--------|---------|
| 0100 | 1100 | --- | 0101 | 1001 | Block A |
| 0100 | 0001 | --- | 0100 | 0101 | Block B |
| 0100 | 0101 | --- | 0010 | 0110 | Block C |

Figure 3: RAID-4 data

According to the figure, Disk-3 has crashed. Identify the correct data present in the three blocks of Disk-3. Also, assuming that the binary values represent 8 bit ASCII code, identify the correct data word present inside the RAID-4 storage system.

Consider the following statements and identify the correct statements.

1. Block A: 0100, Block B: 0110, Block C: 0101
2. Block A: 0100, Block B: 1011, Block C: 0010
3. Block A: 0100, Block B: 0100, Block C: 0101
4. The word is : 'leader'
5. The word is: 'LEADER'

Note:

- Assuming block size is 4 bits.
- Disk-5 is the parity disk.
- The ASCII value of 'A' is 65 and 'a' is 97.

Options :

6406531175254. ✘ Statements 3 & 4

6406531175255. ✘ Statements 2 & 5

6406531175256. ✘ Statements 1 & 4

6406531175257. ✓ Statements 3 & 5

Question Number : 343 Question Id : 640653354368 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the given schedules **S1** and **S2** which performs independent tasks.

| T1 | T2 |
|------------|------------|
| | Lock-X(A) |
| | Write-(A) |
| | Lock-S(B) |
| Lock-S(B) | Read-(B) |
| Read-(B) | Unlock-(B) |
| | Commit |
| | Unlock-(A) |
| Lock-X(A) | |
| Write-(A) | |
| Unlock-(A) | |
| Unlock-(B) | |
| Commit | |

Table 8: Schedule S1

| T1 | T2 |
|------------|------------|
| | Lock-S(A) |
| | Read-(A) |
| Lock-X(B) | |
| Read-(B) | |
| Write-(B) | |
| commit | |
| Unlock-(B) | |
| | Unlock-(A) |
| | commit |

Table 9: Schedule S2

Which among the following statement is correct?

Options :

6406531175262. ✘ Both S1 and S2 follow the rigorous two-phase locking protocol.
6406531175263. ✘ Both S1 and S2 follow the Strict two-phase locking protocol.

6406531175264. ✓ Only S2 follows Strict two-phase locking protocol.

6406531175265. ✗ Only S1 follows Strict two-phase locking protocol.

Question Number : 344 Question Id : 640653354379 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the relation as shown in the table :

| customer_name |
|---------------|
| Akash |
| Akshay |
| A |
| A.K. |
| Aksh |
| Ak |
| Ak.S. |
| Aks |

Table 11: customer

Which of the following SQL statement gives the result given below?

| customer_name |
|---------------|
| Ak.S. |
| Akash |
| Aks |

Options :

```
SELECT customer_name  
FROM customer  
WHERE customer_name LIKE 'Ak_%'  
ORDER BY customer_name DESC
```

6406531175300. ✗ FETCH FIRST 3 ROWS ONLY

```
SELECT customer_name  
FROM customer  
WHERE customer_name LIKE 'Ak_%'  
ORDER BY customer_name ASC
```

6406531175301. ✓ FETCH FIRST 3 ROWS ONLY

```
SELECT customer_name  
FROM customer  
WHERE customer_name LIKE 'Ak%'  
ORDER BY customer_name ASC
```

6406531175302. ✗ FETCH FIRST 3 ROWS ONLY

```
SELECT customer_name  
FROM customer  
WHERE customer_name LIKE 'A__%'  
ORDER BY customer_name DESC
```

6406531175303. ✗ FETCH FIRST 3 ROWS ONLY

Sub-Section Number : 5

Sub-Section Id : 64065351192

Question Shuffling Allowed : Yes

Question Number : 345 Question Id : 640653354356 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider the following relations:

players(pid, name, jersey_no, team_id)

teams(team_id, matches, points)

Choose the correct TRC or DRC expression which is equivalent to the below SQL query.

```
SELECT p.name, t.points  
FROM players p natural join teams t  
WHERE p.jersey_no = 7
```

Options :

{ $x \mid \exists p \in \text{players} \exists t \in \text{teams}(p.\text{team_id} = t.\text{team_id} \wedge p.\text{jersey_no} = 7 \wedge$

6406531175212. ✓ $x.\text{name} = p.\text{name} \wedge x.\text{points} = t.\text{points})\}$

$\{x \mid \exists p \in players \exists t \in teams(p.team_id = t.team_id \wedge p.jersey_no = 7 \wedge x.name \wedge x.points)\}$

6406531175213. ✘

$\{\langle b, o \rangle \mid \exists a, b, c, d (\langle a, b, c, d \rangle \in players \wedge c = 7) \wedge \exists m, n, o (\langle m, n, o \rangle \in teams \wedge d = m)\}$

6406531175214. ✓

$\{\langle b, o \rangle \mid \exists a, b, c, d (\langle a, b, c, d \rangle \in players \wedge c = 7) \wedge \exists m, n, o (\langle m, n, o \rangle \in teams)\}$

6406531175215. ✘

$\{\langle b, o \rangle \mid (\langle a, b, c, d \rangle \in players \wedge c = 7) \wedge (\langle m, n, o \rangle \in teams \wedge d = m)\}$

6406531175216. ✘

Question Number : 346 Question Id : 640653354357 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Choose the correct sets of functional dependencies for the relation $R(A,B,C,D)$ under which R is in 3NF but not in BCNF.

Options :

6406531175217. ✘ $\{AB \rightarrow CD\}$

6406531175218. ✓ $\{AB \rightarrow CD, C \rightarrow A\}$

6406531175219. ✘ $\{AB \rightarrow C, B \rightarrow D, C \rightarrow D\}$

6406531175220. ✘ $\{AB \rightarrow C, C \rightarrow D, AB \rightarrow D\}$

Question Number : 347 Question Id : 640653354359 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider the relation $R(A, B, C, D, E, G)$ having the following functional dependencies:

$$\mathcal{F} = \{AB \rightarrow C, AC \rightarrow B, AD \rightarrow E, B \rightarrow D, BC \rightarrow A, E \rightarrow G\}$$

Let decompose the relation R into $R1(BC)$, $R2(ABDE)$ and $R3(EG)$. Check whether the decomposition is lossless or lossy, and if it is lossy, then by adding which of the following functional dependencies, the decomposition will become lossless.

Options :

6406531175225. ✘ The decomposition is lossless.

6406531175226. ✘ $B \rightarrow E$

6406531175227. ✘ $B \rightarrow G$

6406531175228. ✓ $D \rightarrow C$

6406531175229. ✓ $D \rightarrow A$

Question Number : 348 Question Id : 640653354365 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider a state of transactions as shown in Figure 2.

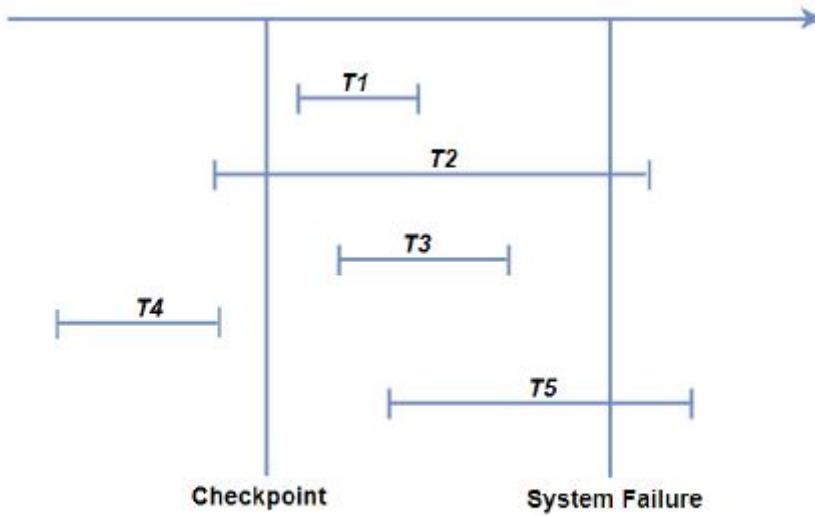


Figure 2: State of Transactions

According to the above figure, which among the following statement(s) is/are incorrect?

Options :

6406531175250. ✘ The transaction T4 can be ignored.

6406531175251. ✘ The transactions that need to be undone are T2 and T5.

6406531175252. ✓ The transactions T1 and T3 can be ignored.

6406531175253. ✘ The transactions that need to be redone are T1 and T3.

Question Number : 349 Question Id : 640653354369 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Consider the following schedule **S** with three transactions T1, T2 and T3:

S: R2(A);W2(A);C2;R3(A);W3(A);C3;R1(B);W1(B);R1(D);C1;

Where Ri(A) denotes a read operation by transaction Ti on a data item X, Wi(A) denotes a write operation by transaction Ti on a data item A, Ci denotes a commit by Ti.

Which among the following statement(s) is/are correct?

Options :

6406531175266. ✓ S is a recoverable schedule.

6406531175267. ✘ S is a non recoverable schedule.

6406531175268. ✓ S is a cascadeless schedule

6406531175269. ✘ S is a cascading rollback

Sub-Section Number : 6

Sub-Section Id : 64065351193

Question Shuffling Allowed : Yes

Question Number : 350 Question Id : 640653354367 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider two logs of transaction as shown below, where immediate database modification scheme is used in **Table 1** and deferred database modification scheme is used in **Table 2**.

| Steps | Details of log |
|--------------|--------------------------------------|
| 1 | $\langle T_0, \text{start} \rangle$ |
| 2 | $\langle T_0, P, 750, 400 \rangle$ |
| 3 | $\langle T_0, Q, 1000, 800 \rangle$ |
| 4 | $\langle T_1, \text{start} \rangle$ |
| 5 | $\langle T_1, R, 1500, 1000 \rangle$ |
| 6 | $\langle T_1, \text{commit} \rangle$ |

Table 1: Immediate Database Modification Scheme

| Steps | Details of log |
|--------------|--------------------------------------|
| 1 | $\langle T_2, \text{start} \rangle$ |
| 2 | $\langle T_2, A, 1600, 1200 \rangle$ |
| 3 | $\langle T_2, \text{commit} \rangle$ |
| 4 | $\langle T_3, \text{start} \rangle$ |
| 5 | $\langle T_3, B, 1400, 1100 \rangle$ |
| 6 | $\langle T_3, \text{commit} \rangle$ |

Table 2: Deferred Database Modification Scheme

In Table 1 & Table 2, if a system crash occurs after the step 6 and the recovery of the system is successfully completed, identify the correct actions from the above diagram.

Options :

6406531175258. ❌ After completion of recovery in immediate database modification scheme, the value of P , Q and R in the buffer will be 750, 1000 and 1000 respectively.

6406531175259. ❌ In Table 1, $\{T_0\}$ needs to be redone and $\{T_1\}$ needs to be undone.

6406531175260. ✓ After completion of recovery in immediate database modification scheme, the value of P , Q and R in the buffer will be 400, 800 and 1500 respectively

6406531175261. ❌ After completion of recovery in deferred database modification scheme, the value of A and B in the buffer will be 1600 and 1400 respectively

Question Number : 351 Question Id : 640653354378 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider the following relations:

```
music(music_id, music_name, duration, genre, producer)
singer(singer_id, singer_name, city, country)
music_playback_singer(music_id, singer_id)
```

Choose the correct SQL statement(s) to find names of the music which were produced by producer name 'YourFavMusic.com' but the songs which were not sung by singer 'Lady Jaye'.

Options :

6406531175296. ✓

```
SELECT music_name
FROM music
WHERE producer = 'YourFavMusic.com'
EXCEPT
SELECT music_name
FROM music INNER JOIN music_playback_singer
ON music.music_id = music_playback_singer.music_id
INNER JOIN singer ON singer.singer_id = music_playback_singer.singer_id
WHERE singer.singer_name = 'Lady Jaye'
```

6406531175297. ✗

```
SELECT music_name
FROM music
WHERE producer = 'YourFavMusic.com'
UNION
SELECT music_name
FROM music INNER JOIN music_playback_singer
ON music.music_id = music_playback_singer.music_id
INNER JOIN singer ON singer.singer_id = music_playback_singer.singer_id
WHERE singer.singer_name = 'Lady Jaye'
```

6406531175298. ✓

```
SELECT music_name
FROM music INNER JOIN music_playback_singer
ON music.music_id = music_playback_singer.music_id
INNER JOIN singer ON singer.singer_id = music_playback_singer.singer_id
WHERE music.producer= 'YourFavMusic.com' AND
singer.singer_name != 'Lady Jaye'
```

6406531175299. ✗

```
SELECT music_name
FROM music INNER JOIN music_playback_singer
ON music.music_id = music_playback_singer.music_id
INNER JOIN singer ON singer.singer_id = music_playback_singer.singer_id
WHERE music.producer= 'YourFavMusic.com'
OR singer.singer_name = 'Lady Jaye'
```

| | |
|-------------------------------------|-------------|
| Sub-Section Number : | 7 |
| Sub-Section Id : | 64065351194 |
| Question Shuffling Allowed : | Yes |

Question Number : 352 Question Id : 640653354370 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Consider the following schedule **S** with four transactions T1, T2, T3 and T4:

S: R2(B);R1(B);R1(A);W1(A);R3(C);W3(C);R4(B)

The number of serial schedule for given schedule **S** is_____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

24

Question Number : 353 Question Id : 640653354375 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Construct a binary search tree by inserting the following values in the following order 30, 20, 27, 86, 103, 25, 60, 90, 10, 15. What is the sum of the key values in non-leaf (including root) nodes of the constructed binary search tree?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

276

Java

Section Id : 64065322255

Section Number : 11

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 23

Number of Questions to be attempted : 23

Section Marks : 100

Display Number Panel : Yes

Group All Questions : No

Enable Mark as Answered Mark for Review and Clear Response : Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 64065351195

Question Shuffling Allowed : No

Question Number : 354 **Question Id :** 640653354380 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 0

Question Label : Multiple Choice Question

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175304. ✓ Yes

6406531175305. ✗ No

Sub-Section Number : 2

Sub-Section Id : 64065351196

Question Shuffling Allowed : Yes

Question Number : 355 Question Id : 640653354382 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the Java code given below.

```
class Customer{  
    private String name;  
    public Customer(String n){  
        this.name = n;  
    }  
    public Customer(Customer c){  
        this.name = c.name;  
    }  
    public void setName(String n){  
        name = n;  
    }  
    public String getName(){  
        return name;  
    }  
}  
public class Test{  
    public static void main(String[] args){  
        Customer c1 = new Customer("Latha");  
        Customer c2 = c1;  
        Customer c3 = new Customer(c1);  
        c1.setName("Geeta");  
        System.out.println("c2.name : " + c2.getName());  
        System.out.println("c3.name : " + c3.getName());  
    }  
}
```

What will the output be?

Options :

c2.name : Latha
6406531175311. ✘ c3.name : Latha

c2.name : Geeta
6406531175312. ✓ c3.name : Latha

c2.name : Geeta
6406531175313. ✘ c3.name : Geeta

c2.name : Latha
6406531175314. ✘ c3.name : Geeta

Question Number : 356 Question Id : 640653354386 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Assume that the file “test.txt” contains the following two lines of text.

M.S Dhoni is a professional Indian cricketer
M.S Dhoni is from jharkhand

Consider the code given below.

```
import java.io.*;
import java.util.*;
public class FileTest {
    public static void main(String[] args) {
        try {
            var in=new FileInputStream("test.txt");
            var sc=new Scanner(in);
            var data=new TreeSet<String>();
            while(sc.hasNext()) {
                data.add(sc.next()+" ");
            }
            for(String str:data)
                System.out.print(str);
        } catch (FileNotFoundException e) {
            System.out.println("File does not exist.");
        }
        catch (IOException e) {
            System.out.println("Error in writing a file.");
        }
    }
}
```

What will the output be?

Options :

6406531175327. ❌ M.S Dhoni is a professional Indian cricketer M.S Dhoni is from jharkhand

6406531175328. ✓ Dhoni Indian M.S a cricketer from is jharkhand professional

6406531175329. ❌ Dhoni Indian M.S a cricketer is professional

6406531175330. ✶ Dhoni M.S from is jharkhand

Question Number : 357 Question Id : 640653354398 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following java code

```
import java.util.stream.*;
public class Main{
    public static void main(String[] args){
        Integer[] a = {11, 8, 20, 13, 6};
        Stream.of(a)
            .map((i) -> i - 8).filter((i) -> i% 2 == 0)
            .forEach((x) -> System.out.println(x));
    }
}
```

What will the output be?

Options :

8

20

6406531175375. ✶ 6

0

6406531175376. ✶ 12

6406531175377. ✶ 12

0

12

6406531175378. ✓ -2

Sub-Section Number :

3

Sub-Section Id :

64065351197

Question Shuffling Allowed :

Yes

Question Number : 358 Question Id : 640653354381 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
class Mountain{
    public String getState(String name){
        String answer;
        switch(name){
            case "Kanchenjunga": answer = "Sikkim";
                break;
            case "Nanda Devi":   answer = "Uttarakhand";
                break;
            default:             answer = null;
                break;
        }
        return answer;
    }
}
public class Test{
    public static void main(String[] args){
        Optional<String> op = Optional.ofNullable(new Mountain()
            .getState("Saraswati"));
        op.ifPresent(n->System.out.println(n.toUpperCase()));
    }
}
```

Choose the correct option.

Options :

6406531175306. ✓ This program does not generate any output.

6406531175307. ❌ This program generates a NullPointerException.

This program generates the output:

6406531175308. ❌ NULL

This program generates the output:

6406531175309. ❌ SIKKIM

This program generates the output:

UTTARAKHAND

6406531175310. ❌

Question Number : 359 Question Id : 640653354387 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the Java code given below.

```

import java.io.*;
class Rewards implements Serializable{
    private String r_type="****";
    private transient String code="****";
    private String exp="****";
    public Rewards(String t, String c, String e) {
        r_type = t;
        code = c;
        exp = e;
    }
    public String toString() {
        return "Reward_Type = " + r_type + ", code = " + code + ", exp = " + exp;
    }
}
public class SerialTest{
    public static void main(String[] args) throws Exception{
        var fos = new FileOutputStream("reward.txt");
        var os = new ObjectOutputStream(fos);
        os.writeObject(new Rewards("Fashion", "BXBP0689", "12/08/22"));
        var fis = new FileInputStream("reward.txt");
        var ois = new ObjectInputStream(fis);
        Rewards r = (Rewards)ois.readObject();
        System.out.println(r);
    }
}

```

What will the output be?

Options :

640653117531. ❌ Reward_Type = Fashion, code = ****, exp = 12/08/22

640653117532. ✓ Reward_Type = Fashion, code = null, exp = 12/08/22

640653117533. ❌ Reward_Type = Fashion, code = BXBP0689, exp = 12/08/22

640653117534. ❌ Reward_Type = null, code = null, exp = null

Question Number : 360 Question Id : 640653354400 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the following java code

```
public class Test{
    public static double compute(int a, int b){
        int c = 0;
        assert a > 0: "a must be > 0";      //assert-1
        assert b > 0: b;                      //assert-2
        c = a / b;
        assert c >= 0: c;                    //assert-3
        return Math.sqrt(c);
    }
    public static void main(String[] args){
        int a = -10;
        int b = 5;
        assert b != 0: "b == 0";            //assert-4
        compute(a, b);
    }
}
```

Identify the first assert statement that throws the `AssertionError` when the class is executed as:

`java -ea Test`

Options :

6406531175383. ✓ assert-1

6406531175384. ✗ assert-2

6406531175385. ✗ assert-3

6406531175386. ✗ assert-4

Sub-Section Number :

4

Sub-Section Id :

64065351198

Question Shuffling Allowed :

Yes

Question Number : 361 Question Id : 640653354384 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
public class MapEx {
    public static void main(String args[]) {

        Map<String, Integer> tmap, lhmap, hmap;

        hmap = new HashMap<String, Integer>();
        hmap.put("Banana", 2);
        hmap.put("Apple", 3);
        hmap.put("Grapes", 7);
        hmap.put("Kiwi", 10);

        lhmap = new LinkedHashMap<String, Integer>();
        tmap = new TreeMap<String, Integer>();

        for(Map.Entry<String, Integer> entry:hmap.entrySet()) {
            tmap.put(entry.getKey(), entry.getValue());
        }

        for(Map.Entry<String, Integer> entry:tmap.entrySet()) {
            lhmap.put(entry.getKey(), entry.getValue());
        }

        System.out.println(hmap);
        System.out.println(tmap);
        System.out.println(lhmap);
    }
}
```

Choose the correct option regarding predicting the order of elements, with respect to the original ordering, in each map object.

Options :

6406531175319. ✶ We cannot predict the order of elements in **hmap**, **tmap** or **lhmap**.

6406531175320. ✖ We can predict the order of elements in hmap and lhmap, but not tmap.

6406531175321. ✓ We can predict the order of elements in tmap and lhmap but not that of hmap.

6406531175322. ✖ We can predict the order of elements in hmap, tmap and lhmap.

Question Number : 362 Question Id : 640653354385 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
import java.util.stream.*;
public class CollectRes {
    public static void main(String[] args) {
        var list = new ArrayList<String>();
        list.add(null);
        list.add("Sonalika");
        list.add(null);
        list.add("Mahindra");
        list.add("Mahindra");
        list.add("John Deere");
        list.add("Escorts");
        list.add("Escorts");
        Stream<String> stream = list.stream();
        //CODE BLOCK
        System.out.println(obj);
    }
}
```

Choose the correct option(s) to fill in place of CODE BLOCK so that the output is:

[Escorts, John Deere, Mahindra, Sonalika]

Options :

```
var obj = list.stream()
    .filter(str -> str != null)
    .limit(4)
    .collect(Collectors.toSet());
```

6406531175323. ✘

```
var obj = list.stream()
    .map(str -> str != null)
    .collect(Collectors.toList());
```

6406531175324. ✘

```
var obj= list.stream()
    .filter(str -> str != null)
    .collect(Collectors.toCollection(TreeSet::new));
```

6406531175325. ✓

```
var obj = list.stream()
    .filter(str -> str != null)
    .limit(4)
    .collect(Collectors.toList());
```

6406531175326. ✘

Question Number : 363 Question Id : 640653354388 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the Java code given below.

```

interface ClassOne{
    default void show(){
        System.out.println("Inside show of ClassOne");
    }
}
interface ClassTwo extends ClassOne{                                //LINE-1
    default void show(){
        System.out.println("Inside show of ClassTwo");
    }
}
class ClassThree implements ClassTwo {
    public void show(){                                         //LINE-2
        System.out.println("Inside show of ClassThree");
    }
}
public class AbstrInterface {
    public static void main(String[] args) {
        ClassOne ct = new ClassThree();                         //LINE-3
        ct.show();
    }
}

```

Choose the correct option.

Options :

Compilation error at LINE-1, because an interface cannot extend another interface.
6406531175335. ❌

Compilation error at LINE-2, because there is ambiguity in which show() method is being implemented.
6406531175336. ❌

Runtime error, because an object of ClassThree cannot be assigned to a variable of type ClassOne (see LINE-3).
6406531175337. ❌

This program generates the output:
6406531175338. ✓ Inside show of ClassThree

Question Number : 364 Question Id : 640653354389 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the Java code given below.

```
import java.util.*;
public class QueueTest{
    public static void main(String[] args) {
        PriorityQueue<String> queue1 = new PriorityQueue<String>();
        queue1.add("Ganga");
        queue1.add("Crompton");
        queue1.add("Usha");
        queue1.add("Orient");
        queue1.add("Havells");

        ArrayDeque<String> queue2 = new ArrayDeque<String>();
        while(queue1.size()>0) {
            queue2.addFirst(queue1.poll()); //LINE-1
        }
        System.out.print(queue2);
    }
}
```

Choose the correct option.

Options :

This program generates the output:
[Usha, Orient, Havells, Ganga, Crompton]
6406531175339. ✓

This program generates the output:
[Havells, Orient, Usha, Crompton, Ganga]
6406531175340. ✗

This program generates the output:
6406531175341. ✗ []

6406531175342. ✗ Compilation error at LINE-1

Question Number : 365 Question Id : 640653354390 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the Java code given below.

```

interface Iterable{
    public boolean has_previous();
    public Object get_previous();
}
class Data{
    private String[] arr = {"Apple", "Banana", "Cipla", "Dog", "Eagle", "Fanta"};
    public Iterable getIterable(int i) {
        return new IterableImpl(i);
    }
    private class IterableImpl implements Iterable{
        private int index;
        public IterableImpl(int i) {
            index = i;
        }
        public boolean has_previous() {
            if (index-2 >= 0 )
                return true;
            return false;
        }
        public String get_previous() {
            index-=2;
            return arr[index];
        }
    }
}
public class IteratorTest{
    public static void main(String[] args) {
        Data d;
        Iterable it;

        d = new Data();
        it=_____ //LINE 1
        while(it.has_previous())
            System.out.println(it.get_previous());

        System.out.println("=====");
        d = new Data();
        it=_____ //LINE 2
        while(it.has_previous())
            System.out.println(it.get_previous());
    }
}

```

Choose the correct option to fill in the blank at LINE 1 and LINE 2 so that the output is:

```

Eagle
Cipla
Apple
=====
Fanta
Dog
Banana

```

Options :

LINE 1 : d.getIterable(7);
6406531175343. * LINE 2 : d.getIterable(6);

LINE 1 : d.getIterable(6);
6406531175344. ✓ LINE 2 : d.getIterable(7);

LINE 1 : d.getIterable(5);
LINE 2 : d.getIterable(6);

6406531175345. *

LINE 1 : d.getIterable(6);
LINE 2 : d.getIterable(5);

6406531175346. *

Question Number : 366 Question Id : 640653354395 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following java code

```
import java.util.*;
class MiddleElementException extends Exception{
    public String toString(){
        return "middle element cannot be processed";
    }
}
public class Test{
    public static void update(int[] a, int i) throws MiddleElementException{
        if(i == a.length/2){
            throw new MiddleElementException();
        }
        a[i] = a[i] * 2;
    }
    public static void main(String[] args) {
        int[] arr = {4, 5, 6, 7, 8};
        try{
            for(int i = 0; i < arr.length; i++){
                update(arr, i);
            }
        } catch(MiddleElementException e){
            System.out.println(e);
        }
        for(int i = 0; i < arr.length; i++){
            System.out.print(arr[i] + " ");
        }
    }
}
```

What will the output be?

Options :

middle element cannot be processed
6406531175363. ✘ 8 10

6406531175364. ✘ middle element cannot be processed

6406531175365. ✘ 8 10 6 7 8

middle element cannot be processed
8 10 6 7 8
6406531175366. ✓

Question Number : 367 Question Id : 640653354396 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following java code

```

class Department implements Cloneable{
    String dname;
    public Department(String n){
        dname = n;
    }
    public Department clone() throws CloneNotSupportedException{
        return (Department)super.clone();
    }
}
class University implements Cloneable{
    String uName;
    Department[] dept;
    public University(String n, Department[] d){
        uName = n;
        dept = d;
    }
    public University(University u){
        this.uName = u.uName;
        this.dept = u.dept;
    }
    public University clone() throws CloneNotSupportedException{
        University unv = (University)super.clone();
        unv.dept = dept.clone();
        return unv;
    }
}
public class Test{
    public static void main(String[] args){
        Department[] dep = {new Department("CSE"), new Department("EEE")};
        University u1 = new University("xyz", dep);
        try{
            University u2 = u1.clone();
            u2.dept[1] = new Department("MECH");
            System.out.println(u1.dept[1].dname + " " + u2.dept[1].dname);

            University u3 = new University(u1);
            u3.dept[1] = new Department("CIVIL");
            System.out.println(u1.dept[1].dname + " " + u3.dept[1].dname);
        }
        catch(CloneNotSupportedException e) {
            System.out.println("clone() not supported");
        }
    }
}

```

What will the output be?

Options :

MECH MECH
6406531175367. ✘ MECH CIVIL

EEE MECH
6406531175368. ✓ CIVIL CIVIL

EEE MECH

EEE CIVIL

6406531175369. *

MECH MECH

CIVIL CIVIL

6406531175370. *

Question Number : 368 Question Id : 640653354397 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following java code

```
import java.util.*;
public class Marks{
    public static void main(String[] args){
        Map<String, Integer> quiz1 = new TreeMap<String, Integer>();
        quiz1.put("Sita", 300);
        quiz1.put("Geeta", 200);
        quiz1.put("Latha", 300);
        quiz1.put("Reena", 340);

        Map<String, Integer> quiz2 = new TreeMap<String, Integer>();
        quiz2.put("Sita", 400);
        quiz2.put("Latha", 400);
        quiz2.put("Reena", 360);
        quiz2.put("Pragna", 400);

        Map<String, Integer> avg = new TreeMap<String, Integer>();

        for(Map.Entry<String, Integer> m1 : quiz1.entrySet())
            avg.put(m1.getKey(), m1.getValue());

        for(Map.Entry<String, Integer> m2 : quiz2.entrySet())
            avg.merge(m2.getKey(), m2.getValue(), (x, y) -> (x + y)/2); // LINE 1

        System.out.println(avg);
    }
}
```

Choose the correct option

Options :

6406531175371. ❌ Compile time error at LINE 1 because of invalid key

This program generates the output:
6406531175372. ✓ {Geeta=200, Latha=350, Pragna=400, Reena=350, Sita=350}

This program generates the output:
6406531175373. ❌ {Sita=350, Geeta=200, Latha=350, Reena=350, Pragna=400}

This program generates the output:
6406531175374. ❌ {Latha=350, Reena=350, Sita=350}

Sub-Section Number : 5

Sub-Section Id : 64065351199

Question Shuffling Allowed : Yes

Question Number : 369 Question Id : 640653354392 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the two Java files given below.

Test1.java:

```
package pack1;
public class Test1 {
    protected void f1() {
        System.out.println("Inside Test1");
    }
}
```

Test2.java:

```
package pack2;
import pack1.Test1; //LINE-1

public class Test2 extends Test1{ //LINE-2
    public static void main(String[] args) {
        Test2 obj = new Test2();
        obj.f2();
    }
    public void f2() {
        f1(); //LINE-3
    }
}
```

Choose the correct option.

Options :

The program generates the output:

6406531175351. ✓ Inside Test1

6406531175352. ✗ Runtime error, because custom packages cannot be imported (see LINE-1).

6406531175353. ✗ LINE-2 generates a compilation error because of extending class **Test1**, which is located in another package.

6406531175354. ✗ LINE-3 generates a compilation error because method **f1()** is not visible from class **Test2**.

Question Number : 370 Question Id : 640653354393 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

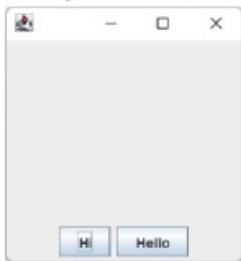
Correct Marks : 4

Question Label : Multiple Select Question

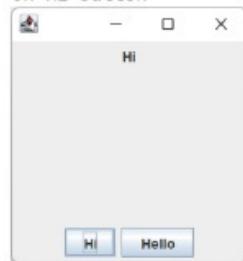
Consider the Java program given below.

```
import javax.swing.*;
import java.awt.event.*;
public class ButtonEvents extends JFrame implements ActionListener{
    private JButton b1, b2;
    private JLabel l1;
    JPanel panel1, panel2;
    public ButtonEvents() {
        b1=new JButton("Hi");
        b2=new JButton("Hello");
        panel1=new JPanel();
        panel1.add(b1);
        panel1.add(b2);
        add(panel1,"South");
        l1=new JLabel("");
        panel2=new JPanel();
        panel2.add(l1);
        add(panel2,"North");
        setVisible(true);
        setSize(400,400);
        b1.setActionCommand("s1");
        b2.setActionCommand("s2");
        b1.addActionListener(this);
        b2.addActionListener(this);
    }
    public void actionPerformed(ActionEvent e) {
        //CODE BLOCK
    }
    public static void main(String[] args) {
        new ButtonEvents();
    }
}
```

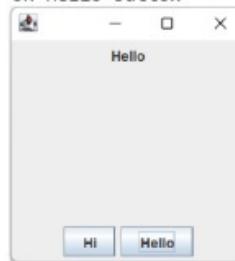
GUI 1: Before clicking on any of the buttons



GUI 2: After clicking on Hi button



GUI 3: After clicking on Hello button



Choose the correct code segment inside method `actionPerformed()` such that whenever either of the two buttons (Hi/Hello) is clicked on panel1, the label text of panel2 will change accordingly.

Options :

```
if(e.getSource().equals(b1))
    l1.setText("Hi");
else if(e.getSource().equals(b2))
    l1.setText("Hello");
```

6406531175355. ✓

```
if(e.getActionCommand().equals(b1))
    l1.setText("Hi");
else if(e.getActionCommand().equals(b2))
    l1.setText("Hello");
```

6406531175356. ✘

```
if(e.getActionCommand().equals("s1"))
    l1.setText("Hi");
else if(e.getActionCommand().equals("s2"))
    l1.setText("Hello");
```

6406531175357. ✓

```
if(e.getSource().equals("s1"))
    l1.setText("Hi");
else if(e.getSource().equals("s2"))
    l1.setText("Hello");
```

6406531175358. ✘

Question Number : 371 Question Id : 640653354394 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the following code

```

import java.util.*;
interface Rankable{
    public Map<String, Integer> rank();
}
class BankAccount implements Rankable{
    Map<String, Integer> account; // account number mapped to account balance
    public BankAccount(Map<String, Integer> a){
        account = a;
    }
    public Map<String, Integer> rank(){
        // returns a new account map object ranked on decreasing order of
        // account balance
    }
}
class Bakery implements Rankable{
    Map<String, Integer> bak; // item number mapped to item price
    public Bakery(Map<String, Integer> b){
        bak = b;
    }
    public Map<String, Integer> rank(){
        // returns a new bak map object ranked on decreasing order of item price
    }
}

public class Test {
    //----- FUNCTION HEADER -----
    Map<String, Integer> m1 = obj.rank();
    // prints the key that is mapped to 1
}
public static void main(String[] args) {
    Map<String, Integer> m = new HashMap<>();
    m.put("1024", 100);
    m.put("1023", 230);
    m.put("0013", 140);
    BankAccount ba = new BankAccount(m);
    Bakery bk = new Bakery(m);
    findRankOne(ba);
    findRankOne(bk);
}
}

```

Identify the appropriate option(s) to fill in place of FUNCTION HEADER such that the code generates the following output:

1023
1023

Options :

6406531175359. ❌ public static <T> void findRankOne(T obj){

6406531175360. ✓ public static <T extends Rankable> void findRankOne(T obj){

6406531175361. ❌ public static void findRankOne(<?> obj){

6406531175362. ✓ public static void findRankOne(Rankable obj){

Question Number : 372 Question Id : 640653354401 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the Java code given below:

```

class Stock{
    int available = 40;
    public synchronized void request(String uname, int n){
        if(available >= n){
            available = available - n;
            System.out.println(uname + " ordered " + n + " item(s)");
        }
        else
            System.out.println(uname + " cannot order " + n + " item(s)");
    }
}
class OnlineOrder implements Runnable{
    Stock st;
    String username;
    int nItems;
    public OnlineOrder(Stock s, String u, int n){
        st = s;
        username = u;
        nItems = n;
    }
    public void run(){
        st.request(username, nItems);
    }
}
public class SaleThreadTest {
    public static void main(String[] args) {
        Stock stk = new Stock();
        OnlineOrder od1 = new OnlineOrder(stk, "user123", 16);
        OnlineOrder od2 = new OnlineOrder(stk, "iamjohn", 25);
        Thread t1 = new Thread(od1);
        Thread t2 = new Thread(od2);
        t1.start();
        t2.start();
    }
}

```

From among the options given below, which are possible outputs of the given code?

Options :

iamjohn ordered 25 item(s)
 6406531175387. ✓ user123 cannot order 16 item(s)

user123 ordered 16 item(s)
 6406531175388. ✓ iamjohn cannot order 25 item(s)

user123 ordered 16 item(s)

6406531175389. ✖ iamjohn ordered 25 item(s)

iamjohn cannot order 25 item(s)

6406531175390. ✖ user123 cannot order 16 item(s)

Sub-Section Number : 6

Sub-Section Id : 64065351200

Question Shuffling Allowed : Yes

Question Number : 373 Question Id : 640653354402 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Select Question

Consider the following code

```

class BookSeat{
    int available = 1;
    public void request(int n, String name){
        if(available >= n){
            available = available - n;
            System.out.println(name + " booked " + n + " seat");
        }
        else{
            System.out.println(name + " cannot book " + n + " seat");
        }
    }
}

class WorkShopRegistration implements Runnable{
    BookSeat b;
    String name;
    int n_seats;
    public WorkShopRegistration(BookSeat b1, String n, int s){
        // constructor to initialize the instance variables
    }
    public void run(){
        b.request(n_seats, name);
    }
}

public class Student {
    public static void main(String[] args) {
        BookSeat obj = new BookSeat();
        WorkShopRegistration r1 = new WorkShopRegistration(obj, "Rohan", 1);
        WorkShopRegistration r2 = new WorkShopRegistration(obj, "Priya", 1);
        Thread t1 = new Thread(r1);
        Thread t2 = new Thread(r2);
        t1.start();
        t2.start();
    }
}

```

Which of the following is/are NOT possible outputs?

Options :

Rohan cannot book 1 seat
 6406531175391. ✘ Priya booked 1 seat

Rohan cannot book 1 seat
 6406531175392. ✓ Priya cannot book 1 seat

Rohan booked 1 seat

Priya cannot book 1 seat

6406531175393. *

Rohan booked 1 seat

Priya booked 1 seat

6406531175394. *

Priya cannot book 1 seat

Rohan booked 1 seat

6406531175395. *

Sub-Section Number :

7

Sub-Section Id :

64065351201

Question Shuffling Allowed :

Yes

Question Number : 374 Question Id : 640653354383 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 6

Question Label : Multiple Select Question

Consider the Java code given below.

```

abstract class Payable{
    abstract double pay();
}

class Salary extends Payable{
    double empSalary;
    public Salary(double s) {
        empSalary = s;
    }
    public double pay() {
        return empSalary;
    }
}

class SalaryWithBonus extends Salary{
    final double BONUS = 0.1; //10% BONUS
    public SalaryWithBonus(double s) {
        super(s);
    }
    public double pay() {
        return empSalary * (1 + BONUS);
    }
}

public class Employee {
    String name;
    double sal;
    public Employee(String n, double s) {
        name = n; sal = s;
    }
    public double getFinalPay(){
        // CODE BLOCK
    }
    public static void main(String[] args) {
        Employee e1 = new Employee("Alan",20000);
        Employee e2 = new Employee("Calvin",10000);
        System.out.println(e1.getFinalPay());
        System.out.println(e2.getFinalPay());
    }
}

```

If the code generates the following as output, what should be filled in place of CODE BLOCK?

20000.0
11000.0

Options :

```

        Payable p;
        if (sal > 10000)
            p = new Salary(sal);
        else
            p = new SalaryWithBonus(sal);
6406531175315. ✓ return p.pay();

```

```
Salary s;
SalaryWithBonus sb;
if (sal > 10000) {
    s = new Salary(sal);
    return s.pay();
}
else{
    sb = new SalaryWithBonus(sal);
    return sb.pay();
}
```

6406531175316. ✓

```
Payable p = new Salary(sal);
```

6406531175317. ✗ return p.pay();

```
Salary s;
SalaryWithBonus sb;
if (sal > 10000) {
    s = new Payable(sal);
    return s.pay();
}
else{
    sb = new Payable(sal);
    return sb.pay();
}
```

6406531175318. ✗ }

Question Number : 375 Question Id : 640653354391 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Select Question

Consider the Java code given below.

```

interface Washable{
    void wash();
}

interface Dryable extends Washable{
    void dry();
}

class WashingMachine{
    public Dryable getPulsator(){
        return new Pulsator();
    }

    private class Pulsator implements Dryable {
        public void wash() {
            System.out.println("Wash support to a washing machine");
        }

        public void dry() {
            System.out.println("Dry support to a washing machine");
        }
    }
}

public class PrivateTest {
    public static void main(String[] args) {
        WashingMachine wm = new WashingMachine();
        //CODE BLOCK
    }
}

```

Choose the correct option(s) to fill in place of CODE BLOCK so that the output is:

Wash support to a washing machine
Dry support to a washing machine

Options :

6406531175347. ✓
Dryable d = wm.getPulsator();
d.wash();
d.dry();

6406531175348. ✗
Washable w = wm.getPulsator();
w.wash();
w.dry();

6406531175349. ✓
Dryable d=wm.getPulsator();
((Washable)d).wash();
d.dry();

6406531175350. ✗

```
Washable w = wm.getPulsator();
w.wash();
Dryable d = w;
d.dry();
```

Question Number : 376 Question Id : 640653354399 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Select Question

Consider the following java code

```

import java.util.*;
abstract class Employee{
    double salary;
    public Employee(double s){
        salary = s;
    }
    //Accessor Method getSalary() here
    public abstract double bonus();
}
class Manager extends Employee{
    public Manager(double s){
        super(s);
    }
    public double bonus(){
        return 0.2 * getSalary();
    }
}
class Developer extends Employee{
    public Developer(double s){
        super(s);
    }
    public double bonus(){
        return 0.1 * getSalary();
    }
}
public class Industry{
    // ----- FUNCTION HEADER -----
    double total_bonus = 0;
    for(Employee e : emp){
        total_bonus = total_bonus + e.bonus();
    }
    return total_bonus;
}
public static void main(String[] args){
    Manager m1 = new Manager(200);
    Manager m2 = new Manager(100);
    List<Manager> mList = new ArrayList<Manager>();
    mList.add(m1);
    mList.add(m2);
    Developer d1 = new Developer(250);
    Developer d2 = new Developer(150);
    List<Developer> dList = new ArrayList<Developer>();
    dList.add(d1);
    dList.add(d2);
    double m_bous = getTotalBonus(mList);
    double d_bonus = getTotalBonus(dList);
    System.out.println("Manager_bonus " + m_bous + ", " + "Developer_bonus: "
        + d_bonus);
}
}

```

Identify the correct option to be filled in place of FUNCTION HEADER to generate the output

Manager_bonus 60.0, Developer_bonus: 40.0.

Options :

6406531175379. ❌ public static double getTotalBonus(List<Employee> emp){

6406531175380. ✓ public static double getTotalBonus(List<? extends Employee> emp){

6406531175381. ❌ public static double getTotalBonus(List<?> emp){

6406531175382. ✓ public static <T extends Employee> double getTotalBonus(List<T> emp){

MLT

| | |
|---|-------------|
| Section Id : | 64065322256 |
| Section Number : | 12 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 33 |
| Number of Questions to be attempted : | 33 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351202 |
| Question Shuffling Allowed : | No |

Question Number : 377 Question Id : 640653354403 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175396. ✓ Yes

6406531175397. ✗ No

Question Number : 378 Question Id : 640653354404 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Note:

Do not write your answer as percentage. Always enter fractions as they are. e.g. if your answer is 0.245, enter the same, do not enter 24.5 %.

Options :

6406531175398. ✓ Useful Data has been mentioned above.

6406531175399. ✗ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065351203

Question Shuffling Allowed : Yes

Question Number : 379 Question Id : 640653354415 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

During classification of linearly separable data-set using perceptron algorithm, as the value of learning rate α is decreased,

Options :

6406531175430. ❌ The number of steps required for convergence increases.
6406531175431. ❌ The number of steps required for convergence decreases.
6406531175432. ✓ The number of steps required for convergence is independent of the learning rate.
6406531175433. ❌ The perceptron algorithm may not converge.

Question Number : 380 Question Id : 640653354419 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A knn algorithm with $k = 30$ gives high training error and high validation error. What value of the k we should choose to get the better performance of the algorithm?

Options :

6406531175441. ✓ Less than 30

6406531175442. ❌ Greater than 30

Question Number : 381 Question Id : 640653354425 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

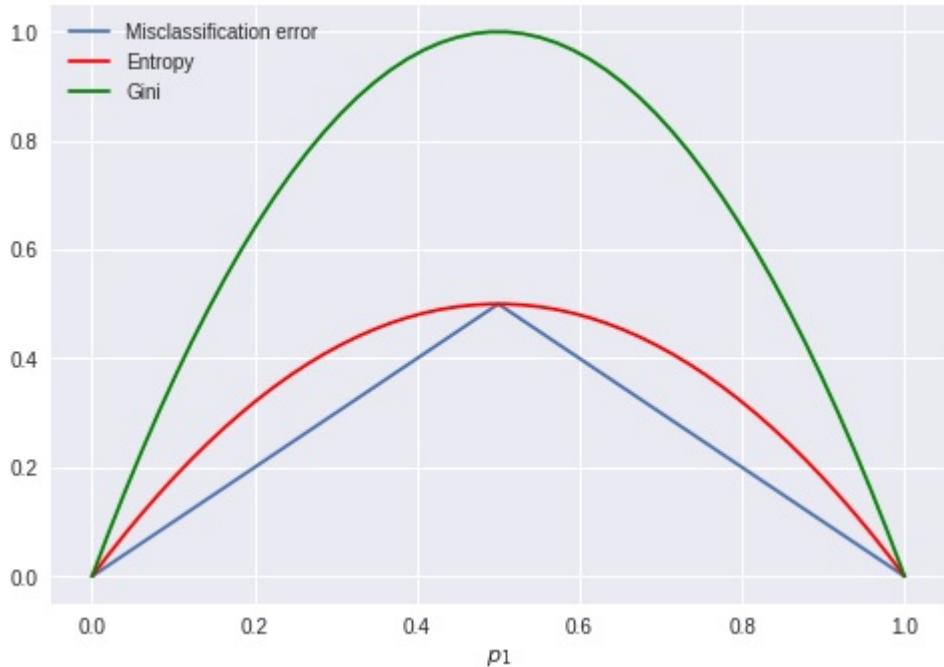
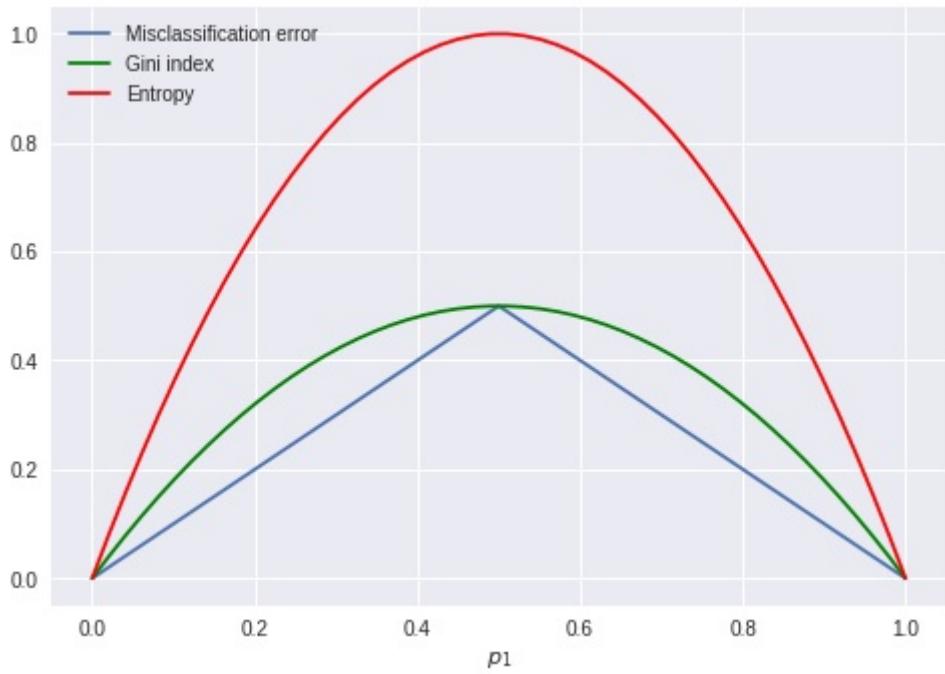
Correct Marks : 2

Question Label : Multiple Choice Question

Consider a binary classification problem. Let p_1 denote the proportion of class 0 examples in a particular node. Which of the following graphs shows correct curves for the Gini-index, Entropy and misclassification error of that node?

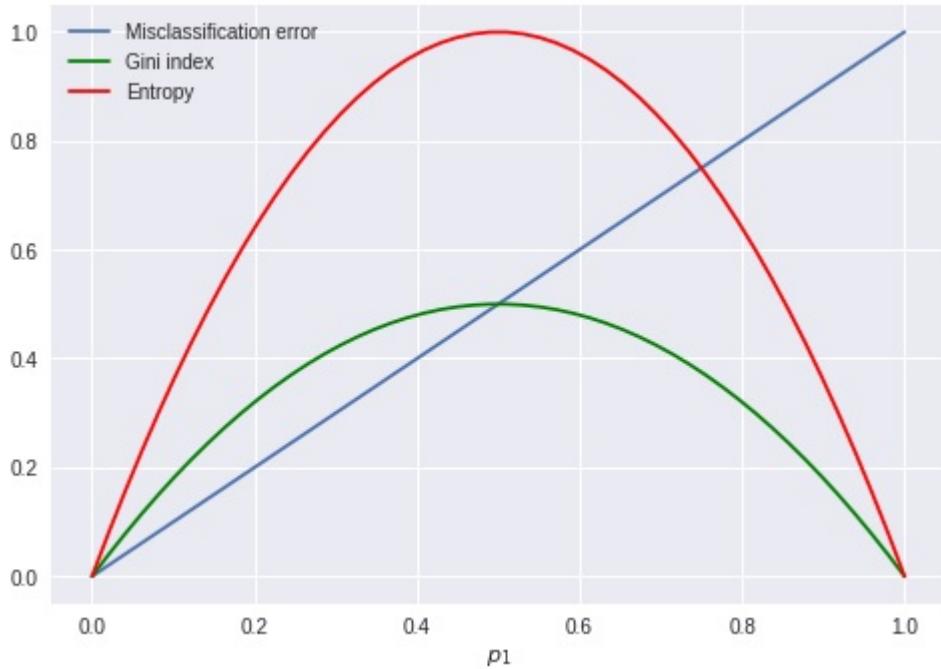
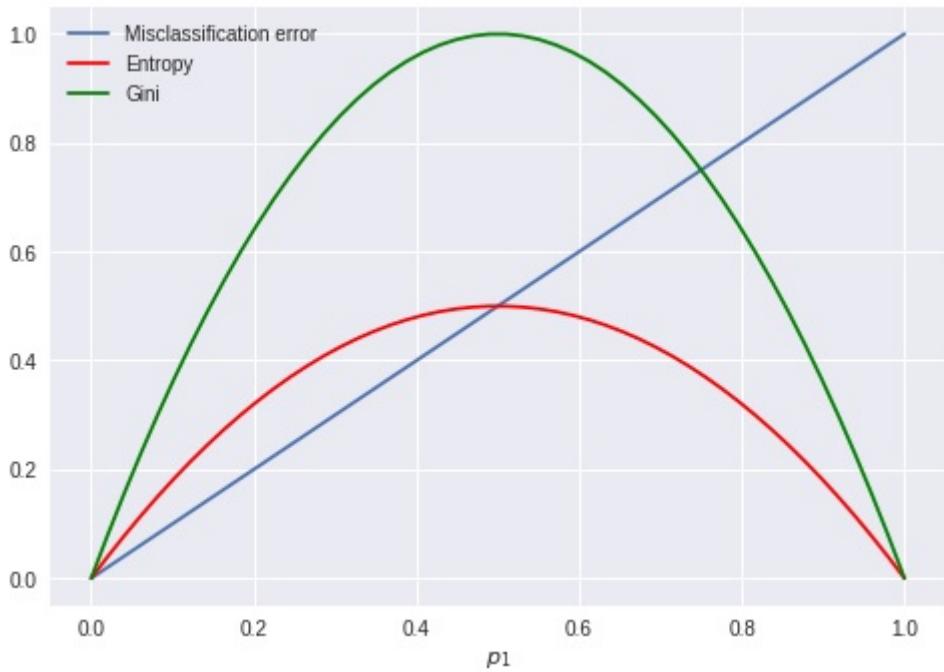
Options :

6406531175447. ✓



6406531175448. ✎

6406531175449. ✎



6406531175450. *

Question Number : 382 Question Id : 640653354436 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The following is the activation vector output by some hidden layer in a neural network when some input vector is given to it:

$\begin{bmatrix} 0.2 \\ 1.8 \\ 3.9 \\ 0.1 \\ 0 \\ 5.8 \end{bmatrix}$

Which of the following could be the activation function used in this layer?

Options :

6406531175473. ✘ Softmax

6406531175474. ✘ Sigmoid

6406531175475. ✓ ReLU

6406531175476. ✘ Tanh

Sub-Section Number : 3

Sub-Section Id : 64065351204

Question Shuffling Allowed : Yes

Question Number : 383 Question Id : 640653354405 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

Which of the following are multi label problems? For each option, assume suitable features are available.

Options :

6406531175400. ✘ Predicted number of run Indian Cricket team will score in their next ODI.

6406531175401. ✓ Amount of money that Amitabh Bachchan's next three movies each will make.

6406531175402. ✓ Predicting number of goals Ronaldo will score in next 10 matches each.

6406531175403. ✘ Predicting blood group of a person

6406531175404. ✓ Predicting blood sugar level of a person for next 15 days each.

Question Number : 384 Question Id : 640653354429 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Select Question

In a random forest model let $p < m$ be the number of randomly selected features that are used to identify the best split at any node of a tree. Which of the following are true? (m is the original number of features)

Options :

6406531175453. ❌ Increasing p reduces the correlation between any two trees in the forest.

6406531175454. ✓ Decreasing p reduces the correlation between any two trees in the forest.

6406531175455. ✓ Increasing p increases the performance of individual trees in the forest.

6406531175456. ❌ Decreasing p increases the performance of individual trees in the forest.

Sub-Section Number : 4

Sub-Section Id : 64065351205

Question Shuffling Allowed : Yes

Question Number : 385 Question Id : 640653354408 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Consider feature matrix $\mathbf{X} = \begin{bmatrix} 1 & 2 \\ 2 & 1 \\ 2 & 3 \end{bmatrix}$, label vector $\mathbf{y} = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$ and the weight

vector is $\mathbf{w} = \begin{bmatrix} 1 \\ -2 \\ 3 \end{bmatrix}$. Add a dummy feature to \mathbf{X} .

What will be the value of the loss function if a regression model without regularization is fitted?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

14 to 15

Question Number : 386 **Question Id :** 640653354439 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Short Answer Question

Consider a test-dataset of 100 points for a binary classification problem, where 60 belong to the positive class (true label) and the rest belong to the negative class (true label). The following is a table for some classifier that has been prepared by an ML engineer:

| | Predicted label (+) | Predicted label (-) |
|----------------|---------------------|---------------------|
| True label (+) | 30 | 30 |
| True label (-) | 10 | 30 |

If this is a valid confusion matrix (just by looking at the numbers), enter the classifier's recall as the answer. If this is not a valid confusion matrix, enter 0 as the answer. Your answer should be in the interval [0, 1], endpoints inclusive. Enter your answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.49 to 0.51

Sub-Section Number : 5

Sub-Section Id : 64065351206

Question Shuffling Allowed : Yes

Question Number : 387 **Question Id :** 640653354412 **Question Type :** MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a modified loss function for linear regression that is of the following form for a training dataset that has n points:

$$L(\mathbf{w}) = \frac{1}{2} \sum_{i=1}^n r_i (\mathbf{w}^T \mathbf{x}_i - y_i)^2$$

Here, r_i is some constant in $[0, 1]$ associated with each data-point in the training dataset. The dummy feature and the corresponding weight are already included in the vectors \mathbf{x} and \mathbf{w} respectively. What is the expression of the gradient of $L(\mathbf{w})$ with respect to \mathbf{w} ?

Options :

6406531175424. ✓
$$\sum_{i=1}^n r_i (\mathbf{w}^T \mathbf{x}_i - y_i) \mathbf{x}_i$$

6406531175425. ✗
$$\sum_{i=1}^n r_i (\mathbf{w}^T \mathbf{x}_i - y_i)$$

6406531175426. ✗
$$\sum_{i=1}^n (\mathbf{w}^T \mathbf{x}_i - y_i) \mathbf{x}_i$$

6406531175427. ✗
$$\sum_{i=1}^n r_i (\mathbf{w}^T \mathbf{x}_i - y_i)^2 \mathbf{x}_i$$

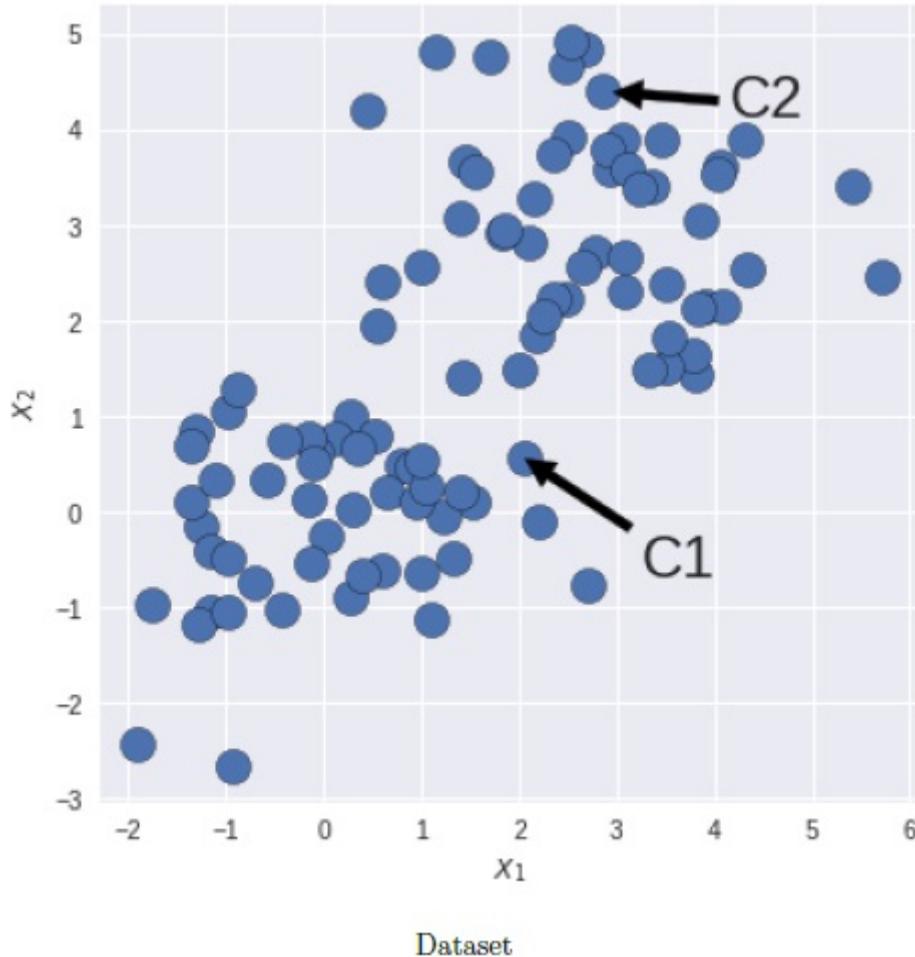
Question Number : 388 Question Id : 640653354430 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider unlabeled data with two features X_1 and X_2 as shown in the figure.



C_1 and C_2 are the coordinates of centroids obtained after certain iterations of K -means algorithm with $K = 2$. Which of the following options is correct about the silhouette score S ? Note: Euclidean distance is used to calculate the distances.

Options :

- 6406531175457. ❌ S will be positive and close to 0.
- 6406531175458. ❌ S will be positive and close to 1.
- 6406531175459. ❌ S will be exact -1.
- 6406531175460. ✓ S will be negative but need not be exact -1.

Question Number : 389 Question Id : 640653354433 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a neural network for a multi-class, image classification problem. When the network is trained on the images as they are, it does a good job on the test data. Call the dataset (train + test) for this setup D_1 and the network N_1 . Assume that we now turn all images upside down, in both the training and test dataset. Now, the network with the same architecture is trained from scratch on this modified dataset. Call the dataset (train + test) for this setup D_2 and network N_2 . Select the most appropriate option.

Options :

6406531175465. ❌ The network N_2 will not be able to learn anything from D_2 . Its test accuracy on D_2 will be very low.

6406531175466. ✓ The network N_2 will be able to learn useful patterns from D_2 . In fact, the performance of network N_2 on D_2 will be similar to N_1 on D_1 .

6406531175467. ❌ The network N_2 will be able to learn somewhat useful patterns from D_2 . But the performance of N_1 on D_1 will be much better than N_2 on D_2 .

Question Number : 390 Question Id : 640653354438 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Two classifiers are trained on a dataset for a binary classification problem. They are then tested on the same dataset. The F_1 scores of both classifiers are the same. (p_1, r_1) and (p_2, r_2) are the precision-recall scores for the two classifiers. Consider the following statements:

Statement-1

If $p_1 > p_2$, then $r_1 < r_2$

Statement-2

If $p_1 = p_2$, then $r_1 = r_2$

Select the most appropriate option.

Options :

6406531175478. ❌ Statement-1 is correct, statement-2 is incorrect

6406531175479. ❌ Statement-1 is incorrect, statement-2 is correct

6406531175480. ✓ Both statements 1 & 2 are correct

6406531175481. ❌ Both statements 1 & 2 are incorrect

Sub-Section Number : 6

Sub-Section Id : 64065351207

Question Shuffling Allowed : Yes

Question Number : 391 Question Id : 640653354406 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following code blocks will produce the same value for the variable 'Ans'? Assume the 'numpy' library is imported as 'np'.

Options :

A = np.diag(np.arange(6))
B = np.arange(6)

6406531175405. ✓ Ans = A@B

A = np.arange(6).astype('int')

6406531175406. ✓ Ans = A**2

A = np.diag(np.arange(5, -1, -1))
B = np.ones(6)
Ans = (5 - A@B).astype('int')

6406531175407. ✓ Ans = Ans*Ans

A = np.array([1, 2, 4, 8, 16, 32])

6406531175408. ❌ Ans = np.log2(A).astype('int')

6406531175409. ❌ All the code blocks produce unique results.

6406531175410. ❌ All the code blocks produce same results.

Question Number : 392 Question Id : 640653354407 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Rajesh trained a model on house price prediction problem. After training he came up with following model:

$$y = 4000 - 20 \cdot x_1 + 15 \cdot x_2 + 500 \cdot x_3 - 30 \cdot x_4$$

where,

y is predicted house price,

x_1 is number of years the house was built before,

x_2 is the carpet area in square feet,

x_3 is the number of floors the apartment/house has,

x_4 represents distance of the property from railway station.

According to Rajesh's model, which of the following statements are correct?

Options :

6406531175411. ❌ Presence of the lift/elevator is the most important feature.

6406531175412. ✓ No. of floors in the building is the most important feature.

6406531175413. ❌ Area is the most important feature.

6406531175414. ❌ Age is the most important feature.

6406531175415. ✓ Distance from railway station is the second most important feature.

6406531175416. ❌ None of these.

Question Number : 393 Question Id : 640653354410 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider that you have 100 non-linear data points randomly generated from a $\cos(2\pi x)$ function $0 \leq x \leq 3$. Choose the correct statement(s) from the following.

Options :

6406531175419. ✓ The polynomial regression model of degree 6 adds a smooth fitting to this data.

6406531175420. ✓ The polynomial regression model of degree 98 overfits this data.

6406531175421. ❌ The polynomial regression model of degree 2 adds a smooth fitting to this data.

6406531175422. ✓ The polynomial regression model of degree 3 underfits this data.

Sub-Section Number : 7

Sub-Section Id : 64065351208

Question Shuffling Allowed : Yes

Question Number : 394 Question Id : 640653354409 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

What is the output of the following code?

```
import numpy as np

def aFunction(A, d):
    temp = np.ones(1)

    for i in range(1, d + 1):
        temp = np.concatenate((temp, A ** i))

    return temp

A = np.arange(4)
print(np.sum(aFunction(A, 2)))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

21.0

Question Number : 395 Question Id : 640653354411 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

Consider the feature matrix $\mathbf{X} = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 4 \end{bmatrix}$ and corresponding label vector

$\mathbf{y} = \begin{bmatrix} 2 \\ 4 \end{bmatrix}$. Let regularization rate, $\lambda = 0.1$. Compute lasso regression loss using weight

$$\mathbf{w} = \begin{bmatrix} 1 \\ 0.01 \\ -0.5 \\ 0 \end{bmatrix}.$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

9.5 to 10.5

Question Number : 396 **Question Id :** 640653354413 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3

Question Label : Short Answer Question

You are given a linearly separable dataset with feature matrix \mathbf{X} , for which a perceptron has been trained until it converges (perfectly separates the data). The weight vector corresponding to it is \mathbf{w} . This dataset has 60 points from the positive class and 40 from the negative class. What is the output of the following snippet of code?

Notes

- The labels for a perceptron lie in $\{-1, 1\}$.
- The NumPy arrays \mathbf{X} and \mathbf{w} are compatible for matrix multiplication, the dummy feature and the corresponding weight are already built into the arrays.
- None of the 100 points lie on the decision boundary.

```
import numpy as np
y_hat = np.where(X @ w > 0, 1, -1)
print(np.sum(y_hat))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

20

Question Number : 397 **Question Id :** 640653354418 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3

Question Label : Short Answer Question

A Gaussian Naive Bayes model is trained for a multi-class classification problem that has 12 features and 5 classes. Find the total number of parameters that have to be estimated for this model. Consider each parameter to be a scalar value. In other words, if we decide to store all the parameters in a Python list, with each element of the list being a float value corresponding to a single parameter, what is the size of this list? Ignore the priors in the calculation. Only focus on the parameters of the class conditional densities.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

120

Question Number : 398 **Question Id :** 640653354432 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3

Question Label : Short Answer Question

Consider the following network architecture:

| Layer | Number of Neurons |
|----------------|-------------------|
| Input | 15 |
| Hidden layer-1 | 30 |
| Hidden layer-2 | 20 |
| Output layer | 5 |

How many parameters (weights + biases) does this network have?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1205

Question Number : 399 Question Id : 640653354437 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

A multi-class classification problem has 5 classes. The training dataset has n data-points, with an equal number of points from each of the 5 classes. Consider a dummy classifier that does prediction as follows: for each input data-point, it picks one of the 5 classes at random (uniformly) and outputs that as its prediction. What is the accuracy of the model on the training dataset as n becomes very large? Your answer should be between 0 and 1. Enter your answer correct to two decimal places.

Hint: Think about it in the probabilistic sense.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.19 to 0.21

Sub-Section Number : 8**Sub-Section Id :** 64065351209**Question Shuffling Allowed :** Yes**Question Number : 400 Question Id : 640653354417 Question Type : MCQ Is Question****Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 4****Question Label : Multiple Choice Question**

Consider a logistic regression model for a binary classification problem with

two features x_1 and x_2 . The feature vector is $\begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$ and labels lie in $\{0, 1\}$. The threshold for inference is 0.5. The dummy feature and the weight corresponding to it can be ignored for this problem. Let x_1 be the horizontal axis and x_2 be the vertical axis. You are given two feature vectors:

$$\mathbf{x}_1 = \begin{bmatrix} \sqrt{3} \\ 1 \end{bmatrix}, \mathbf{x}_2 = \begin{bmatrix} -\sqrt{3} \\ 1 \end{bmatrix}$$

The weight vector makes an angle of θ with the positive x_1 axis (horizontal). Each θ corresponds to a different classifier. For what range of values of θ are both \mathbf{x}_1 and \mathbf{x}_2 predicted to belong to class-1?

Hints:

- To draw the weight vector $\mathbf{w} = \begin{bmatrix} w_1 \\ w_2 \end{bmatrix}$, plot the point (w_1, w_2) and draw an arrow starting at the origin to this point.
- $\tan(30^\circ) = \frac{1}{\sqrt{3}}$

Options :6406531175435. ✓ $60^\circ < \theta < 120^\circ$ 6406531175436. ✗ $0^\circ < \theta < 30^\circ$

6406531175437. ✘ $30^\circ < \theta < 180^\circ$

6406531175438. ✘ $0^\circ < \theta < 180^\circ$

6406531175439. ✘ $0^\circ < \theta < 360^\circ$

Question Number : 401 Question Id : 640653354431 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the following data points

| |
|----------|
| (2,2) |
| (2,3) |
| (6,5) |
| (3.6,4) |
| (3.4, 4) |

We perform k-means clustering on the above data, with $k = 2$, using Manhattan distance as the distance measure. At t th iteration, we have (2,2) as the centroid for cluster-1 and (6,5) as the centroid for cluster-2. After performing $(t + 1)$ th iteration the point (3.4,4) will belong to

Options :

6406531175461. ✘ cluster-1

6406531175462. ✓ cluster-2

6406531175463. ✘ can not be determined

Sub-Section Number : 9

Sub-Section Id : 64065351210

Question Shuffling Allowed : Yes

Question Number : 402 Question Id : 640653354434 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

If W_{ij} is the weight of the edge from neuron i in layer $l - 1$ to neuron j in layer l , which of the following statements about the matrix \mathbf{W} are true? Neurons in a layer are processed (indexed) from top to bottom. So, the first neuron in a layer is the top-most neuron in that layer.

Options :

6406531175468. ✓ The first row of the matrix corresponds to all outgoing connections from the first neuron in layer $l - 1$.

6406531175469. ✗ The first row of the matrix corresponds to all incoming connections to the first neuron in layer l .

6406531175470. ✓ The last column of the matrix corresponds to all incoming connections to the last neuron in layer l .

6406531175471. ✗ The last column of the matrix corresponds to all the outgoing connections from the last neuron in layer $l - 1$.

Sub-Section Number : 10

Sub-Section Id : 64065351211

Question Shuffling Allowed : Yes

Question Number : 403 Question Id : 640653354414 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

A perceptron model is trained on the following binary classification data-set.

| X_1 | X_2 | Label (y) |
|-------|-------|---------------|
| 0 | 0 | -1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | -1 |

At one of the iterations, weights are: $w_0 = -0.7$, $w_1 = 0.8$ and $w_2 = 0.1$. Assume that w'_0 , w'_1 and w'_2 are the updated weights after one epoch (one epoch is completed on going through all the data points). Find the value of $w'_0 + w'_1 + w'_2$. Consider the learning rate to be one. Don't change the order of samples while updating the weight vector. Take the original order of samples.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

-1.8

Question Number : 404 Question Id : 640653354416 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Inference using logistic regression happens as follows. T is called the threshold and is some real number in the interval $(0, 1)$. \hat{y} stands for the predicted label.

$$\hat{y} = \begin{cases} 1, & P(y = 1 | \mathbf{x}) \geq T \\ 0, & \text{otherwise} \end{cases}$$

Given this setup, the equation of the decision boundary is given below:

$$\mathbf{w}^T \mathbf{x} - u = 0$$

\mathbf{w} has the same dimensions as \mathbf{x} . The dummy feature is included in \mathbf{x} and the corresponding weight is included in \mathbf{w} . If $T = \frac{e^2}{1 + e^2}$, what is the value of the unknown quantity u ? Here, e is the Euler's number that is associated with the natural logarithm and is the same one found on your calculator. Enter the closest integer as your answer.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 405 **Question Id :** 640653354420 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

Question Label : Short Answer Question

An SVM has been trained for a 2D problem. The feature vector is $\mathbf{x} = \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$.

It has the following weight vector and bias:

$$\mathbf{w} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}, b = -2$$

Recall that the labels in the SVM setup are +1 and -1. Consider a unit square whose vertices are at:

$$(0, 0), (1, 0), (0, 1), (1, 1)$$

The horizontal axis corresponds to x_1 and the vertical axis corresponds to x_2 . A point is picked at random (uniformly) from the region bounded by the square. What is the probability that this point is predicted as belonging to class +1 by the SVM? Enter your answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.24 to 0.26

Question Number : 406 Question Id : 640653354421 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Find the hinge loss for this soft-margin SVM classifier on the dataset that is given in the table. The weight vector and bias are as follows:

$$\mathbf{w} = \begin{bmatrix} 1 \\ -1 \end{bmatrix}, \quad b = 1$$

The coefficient C can be assumed to be 1.

| x_1 | x_2 | y |
|-------|-------|-----|
| 1 | 4 | -1 |
| -1 | 2 | -1 |
| -2 | 0 | -1 |
| 1 | 2 | -1 |
| 1 | 3 | 1 |
| 1 | 0 | 1 |
| 2 | 1 | 1 |
| 2 | 3 | 1 |

Note that you just need to report the hinge loss. Do not compute the margin loss which involves only the term w . Also note that the hinge loss does not have a factor of 0.5 before it. Enter the closest integer as your answer.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Number : 407 Question Id : 640653354435 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Consider two networks N_1 and N_2 for a binary classification task. N_1 has two neurons at the output layer and uses the softmax activation function. N_2 has one neuron at the output layer and uses sigmoid activation function. We don't need the information about the hidden layers for this problem.

For some test data-point x , the pre-activations at the output layer for N_1 is given below. The first neuron corresponds to class-0 and the second corresponds to class-1:

$$z = \begin{bmatrix} 1 \\ 3 \end{bmatrix}$$

It turns out that for this data-point, both networks predict the same probability of this point belonging to class-1. That is $P(y = 1 | x)$ is the same for both networks. If this is the case, what should be the pre-activation value at the output layer of N_2 , call it z , corresponding to this data-point? Enter the closest integer as your answer.

Notes

- The activation of N_2 at the output-layer is interpreted as $P(y = 1 | x)$.
- The z for N_1 is a vector and the z for N_2 is a scalar.
- Be careful about the distinction between pre-activation and activation.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Sub-Section Number : 11

Sub-Section Id : 64065351212

Question Shuffling Allowed : No

Question Id : 640653354422 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A

Think Time : N.A **Minimum Instruction Time :** 0

Question Numbers : (408 to 409)

Question Label : Comprehension

Consider the following training data-set with three features:

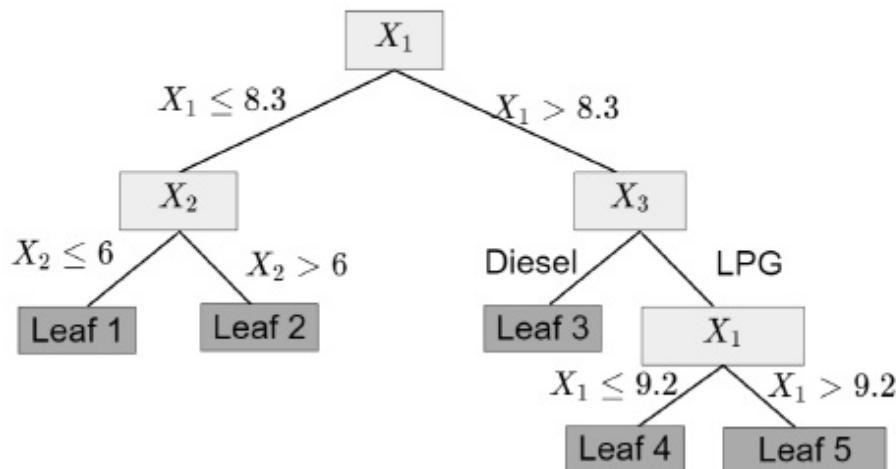
X_1 = Present price of the car (values are given in lac)

X_2 = Age (How many years the car has been driven)

X_3 = Fuel-type (diesel or LPG)

| X_1 | X_2 | X_3 | Selling price (y) |
|-------|-------|--------|-----------------------|
| 8.3 | 4 | LPG | 4.5 |
| 5.5 | 6 | Diesel | 2.0 |
| 16.3 | 7 | LPG | 7.0 |
| 8.4 | 4 | Diesel | 5.0 |
| 7.8 | 6 | LPG | 3.5 |
| 11.5 | 9 | LPG | 5.5 |
| 9.2 | 7 | LPG | 3.5 |
| 8.9 | 3 | Diesel | 5.0 |
| 22.4 | 8 | Diesel | 15.0 |
| 4.5 | 8 | LPG | 1.5 |

Its regression tree is given below. In the tree, each node is denoted by the feature along which it is split.



Regression tree

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 408 Question Id : 640653354423 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

How many samples of the training data-set belong to Leaf 2?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 409 Question Id : 640653354424 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

If the present price of a car which is driven for 5 years is 9.5 lac. If the car has an LPG engine, what will be the prediction for the selling price of the car according to the given regression tree? Enter your answer in lac. If your answer is 5.6 lac, enter the answer 5.6.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

7.0

Sub-Section Number : 12

Sub-Section Id : 64065351213

Question Shuffling Allowed : No

Question Id : 640653354426 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (410 to 411)**Question Label : Comprehension**

Consider that adaboost model is trained on the following binary classification data-set.

| X_1 | X_2 | Label (y) |
|-------|-------|---------------|
| 3.7 | 2 | false |
| 2.0 | 2 | false |
| 5 | 4 | true |
| 2.9 | 5 | false |
| 4.1 | 6 | true |

The data-set is split according to feature X_2 to create the first stump.

Equal sample weights are assigned to each examples to create the first stump and Gini-index measure is used to split the data.

Based on the above data, answer the given subquestions.

Sub questions**Question Number : 410 Question Id : 640653354427 Question Type : SA Calculator : None****Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 4****Question Label : Short Answer Question**

What will be the performance of the first stump? Enter your answer correct to two decimal places.

Response Type : Numeric**Evaluation Required For SA : Yes****Show Word Count : Yes****Answers Type : Range****Text Areas : PlainText****Possible Answers :****0.67 to 0.72****Question Number : 411 Question Id : 640653354428 Question Type : SA Calculator : None****Response Time : N.A Think Time : N.A Minimum Instruction Time : 0****Correct Marks : 4**

Question Label : Short Answer Question

What sample weight will be assigned to the last example to create the next stump? Don't normalize the sample weights. Enter your answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.08 to 0.12

PDSA

Section Id : 64065322257

Section Number : 13

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 31

Number of Questions to be attempted : 31

Section Marks : 100

Display Number Panel : Yes

Group All Questions : No

Enable Mark as Answered Mark for Review and

Yes

Clear Response :

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 64065351214

Question Shuffling Allowed : No

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: PROGRAMMING DATA STRUCTURES AND ALGORITHMS USING PYTHON"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175483. ✓ Yes

6406531175484. ✗ No

Sub-Section Number : 2

Sub-Section Id : 64065351215

Question Shuffling Allowed : Yes

Question Number : 413 Question Id : 640653354441 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Here is a function to return the maximum value among three positive integers. There is a logical error in this function.

```
1 def max3bad(x,y,z):
2     maximum = 0
3     if x >= y:
4         if x >= z:
5             maximum = x
6     elif y >= z:
7         maximum = y
8     else:
9         maximum = z
10    return(maximum)
```

Select the input for which `max3bad` produces an incorrect output.

Options :

6406531175485. ❌

6406531175486. ❌

6406531175487. ❌

6406531175488. ✓

Question Number : 414 Question Id : 640653354442 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

A list having 2^k items has to be processed using either of two given algorithms. Algorithm A takes $8n \log n$ time units and algorithm B takes $0.02n^2$ time units to process a list of n items. What is the largest value of k for which algorithm B would be preferred ?

Options :

6406531175489. ❌ 11

6406531175490. ✓ 12

6406531175491. ❌ 13

6406531175492. ❌ Algorithm A would be preferred always irrespective of k

Question Number : 415 Question Id : 640653354443 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following iterative code:

```
1 def fun(n):
2     i,j = 1,1
3     while(j <= n):
4         i = i+2
5         j = j+i
6         print(j)
```

What would be the running time complexity of the above given function ?

Options :

6406531175493. ✘ $O(\log n)$

6406531175494. ✘ $O(n \log n)$

6406531175495. ✓ $O(\sqrt{n})$

6406531175496. ✘ $O(n^2)$

Question Number : 416 Question Id : 640653354444 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

What is the time complexity of the following recurrence relation ?

$T(1) = 1$

For $n > 1$, $T(n) = 8T(n/2) + n$

Options :

6406531175497. ✘ $O(n^2)$

6406531175498. ✓ $O(n^3)$

6406531175499. ✘ $O(n^2 \log_2 n)$

6406531175500. ✖ $O(n^3 \log_2 n)$

Question Number : 417 Question Id : 640653354445 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

```
1 def selectionsort(L):
2     n = len(L)
3     if n < 1:
4         return(L)
5     for i in range(n):
6         mpos = i
7         for j in range(i+1,n):
8             if L[j] < L[mpos]:
9                 mpos = j
10            (L[i],L[mpos]) = (L[mpos],L[i])
11    return(L)
```

Which of the following statement(s) is/are correct with regard to the given Selection Sort?

1. Selection sort is not stable and it sorts In-place
2. The complexity of Selection sort is $O(n^2)$ in best, average and worst case.
3. In Selection sort, after m passes through the list, the first m elements in the list are the m smallest element of the list.

Options :

6406531175501. ✖ Only statement 1 is true

6406531175502. ✖ Statement 1 and Statement 2 are true

6406531175503. ✖ Statement 1 and Statement 3 are true

6406531175504. ✓ All statements are true

Question Number : 418 Question Id : 640653354446 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Assuming that the median of n elements can be found in $O(n)$ time. What would be the complexity of quick sort, if the median item is always selected as the pivot?

Options :

6406531175505. ✘ $O(\log n)$

6406531175506. ✘ $O(n \log \log n)$

6406531175507. ✓ $O(n \log n)$

6406531175508. ✘ $O(n)$

Question Number : 419 Question Id : 640653354450 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Let G be a undirected connected graph. Let T_d be a depth first search tree of G . Let T_b be a breadth first search tree of G . Consider the following statements.

1. No edge of G is a cross edge with respect to T_d
2. For every edge (u, v) of G , if u is at depth i and v is at depth j in T_b , Then $|i - j| = 1$.

Which of the above statements must necessarily be **true**?

Options :

6406531175515. ✓ 1 only

6406531175516. ✘ 2 only

6406531175517. ✘ Both 1 and 2

6406531175518. ✘ Neither 1 nor 2

Question Number : 420 Question Id : 640653354451 Question Type : MCQ Is Question

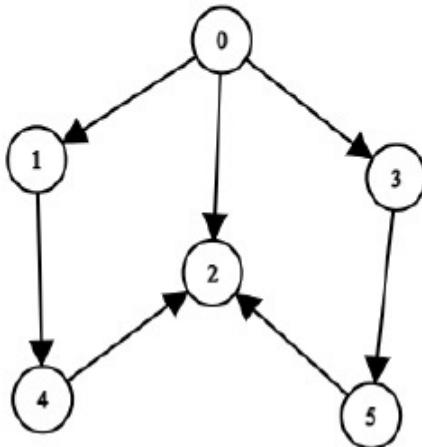
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following directed graph. Run DFS on this graph from vertex 0 . Which of the following is a cross edge.

Note: In the case of multiple neighbours, the algorithms first pick the node which has the largest labelled value.



Options :

6406531175519. ✘ (0,1)

6406531175520. ✘ (0,3)

6406531175521. ✘ (5,2)

6406531175522. ✘ (0,2)

6406531175523. ✓ (4,2)

Question Number : 421 Question Id : 640653354454 Question Type : MCQ Is Question

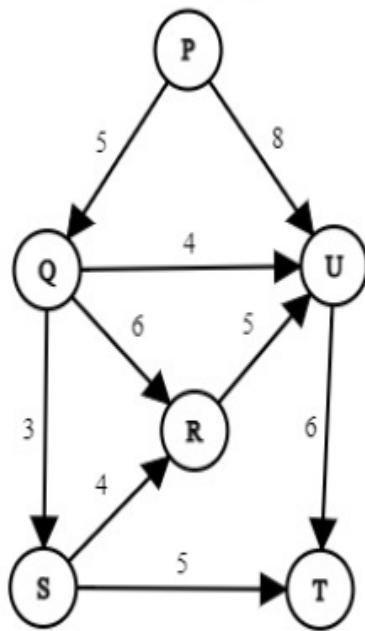
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following directed weighted graph on which Dijkstra algorithm is run with vertex P as the source vertex.



What is the order of nodes in which the nodes are marked as visited by Dijkstra's algorithm ?

Note: If two vertices have same distance, the algorithm picks the next vertex which comes first alphabetically

Options :

6406531175526. ❌ P, Q, S, U, T, R

6406531175527. ✓ P, Q, S, U, R, T

6406531175528. ❌ P, Q, R, S, T, U

6406531175529. ❌ P, Q, S, T, U, R

Question Number : 422 Question Id : 640653354455 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a undirected connected graph G, where each edge contains the equal weight 1. Which one of the following is **true**?

Options :

6406531175530. ✘ Graph G has no minimum spanning tree

6406531175531. ✘ Graph G has unique MST of cost $n-1$

6406531175532. ✓ Graph G has multiple MSTs, each of cost $n-1$

6406531175533. ✘ Graph G has multiple MSTs of different cost

Question Number : 423 Question Id : 640653354456 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

The maximum and minimum number of nodes in a binary search tree of height 7 are _____.

Consider that the height of the empty tree is 0.

Options :

6406531175534. ✘ 64 and 6, respectively

6406531175535. ✘ 128 and 7, respectively

6406531175536. ✘ 127 and 6, respectively

6406531175537. ✓ 127 and 7, respectively

Question Number : 424 Question Id : 640653354457 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a complete binary tree with n nodes, where the left and right subtrees of the root are max heaps. The upper bound to convert the tree to a max heap by an efficient algorithm is

_____.

Options :

6406531175538. ✓ $O(\log n)$

6406531175539. ✘ $O(n)$

6406531175540. ✘ $O(n \log n)$

6406531175541. ✘ $O(n^2)$

Question Number : 425 Question Id : 640653354458 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a binary min-heap made up of $\{1, 2, 3, 4, \dots, 1024\}$. Assume that each number occurs exactly once in the heap. The depth of a node in the heap is equal to the number of edges to that node from the root node. Thus, the root is at depth 0. What is the maximum possible depth of the node number 7?

Options :

6406531175542. ✘ 8

6406531175543. ✘ 7

6406531175544. ✘ 2

6406531175545. ✓ 6

Question Number : 426 Question Id : 640653354460 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following statement(s) is/are **true** about Huffman code algorithm?

1. In an optimal Huffman tree, if leaf labelled **x** is at depth smaller than leaf labelled **y**, then

frequency(x) >= frequency(y)

2. Huffman code algorithm always generates prefix code.
3. Huffman code algorithm is based on a greedy approach.

Options :

6406531175550. ✘ 1 and 2
6406531175551. ✘ 2 and 3
6406531175552. ✘ 1 and 3
6406531175553. ✓ 1, 2 and 3

Question Number : 427 Question Id : 640653354462 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

There are 5 sorted arrays of sizes 10, 20, 36, 45, and 12. If the `merge` algorithm is used to optimally combine all of these sorted arrays together into one sorted sequence, then what is the total number of comparisons needed by the `optimal merge` algorithm in the worst case?

Note: the `merge` algorithm would merge the arrays pairwise, i.e. it would only merge two arrays into a single larger one.

Options :

6406531175555. ✘ 186
6406531175556. ✘ 281
6406531175557. ✓ 264
6406531175558. ✘ 271

Question Number : 428 Question Id : 640653354463 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

In a list `L`, two elements `L[i]` and `L[j]` form a inversion if `L[i] > L[j]` and `i < j`. Which of the following options represents the inversions in the list `L = [2,1,6,4,5,3]` ?

Options :

6406531175559. ✘ (2,1), (5,2), (6,5), (6,3), (4,1), (5,3)

6406531175560. ✘ (2,1), (6,4), (6,5), (6,2), (4,3), (5,2)

6406531175561. ✓ (2,1), (6,4), (6,5), (6,3), (4,3), (5,3)

6406531175562. ✘ (2,1), (6,4), (6,5), (6,3), (4,1), (5,2)

Question Number : 429 Question Id : 640653354467 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following option represents the fail function (or prefix function) for pattern 'abababaa' in the Knuth-Morris-Pratt (KMP) algorithm?

Options :

6406531175566. ✘ [1,1,1,2,3,4,0,1]

6406531175567. ✓ [0,0,1,2,3,4,5,1]

6406531175568. ✘ [0,0,0,1,1,2,3,4]

6406531175569. ✘ [0,0,1,2,3,4,4,1]

Question Number : 430 Question Id : 640653354469 Question Type : MCQ Is Question

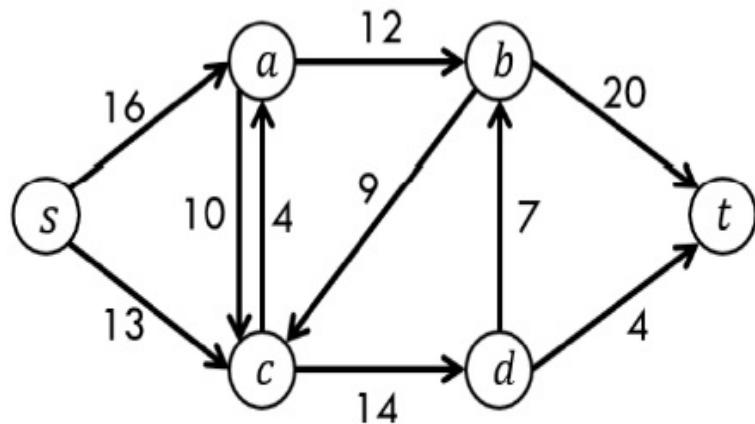
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following network.



Consider the network given above with source s and sink t , with the numbers on the edges denoting maximum capacity across a particular edge. Which of the following edges form a **valid min cut** in the given network?

Options :

6406531175574. ✘ Edges {ab, cd, dt, db}

6406531175575. ✓ Edges {ab, db, dt}

6406531175576. ✘ Edges {ca, db, dt}

6406531175577. ✘ Edges {ab, cd, bc}

Question Number : 431 Question Id : 640653354470 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following statements and select the appropriate option regarding them

1. SAT is a NP complete problem.
2. Given a problem α which is reduced in polynomial time from another problem β . If β is solvable in polynomial time then α is also solvable within polynomial time.

Options :

6406531175578. ✓ Only statement 1 is correct

6406531175579. ✘ Only statement 2 is correct

6406531175580. ✘ Both the statements are correct

6406531175581. ✘ Both the statements are wrong

Sub-Section Number :

3

Sub-Section Id :

64065351216

Question Shuffling Allowed :

Yes

Question Number : 432 Question Id : 640653354447 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the following implementation for Queue

```
1 class Queue:  
2     def __init__(self):  
3         self.queue = []  
4     def enqueue(self,v):  
5         self.queue.append(v)  
6     def isempty(self):  
7         return(self.queue == [])  
8     def dequeue(self):  
9         v = None  
10        if not self.isempty():  
11            v = self.queue[0]  
12            self.queue = self.queue[1:]  
13        return(v)
```

```
1 def fun(Q):  
2     if (not Q.isempty()):  
3         i = Q.dequeue()  
4         fun(Q)  
5         Q.enqueue(i)
```

Assuming that the initial state of the queue was [12,24,20,6,12,8,16] , what is `Q.queue[2]` after `fun(Q)` is executed?

Options :

6406531175509. ✘ 40

6406531175510. ✘ 6

6406531175511. ✓ 12

6406531175512. ✘ 16

Question Number : 433 Question Id : 640653354468 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

First kind of cake requires 200g of flour and 25g of fat, and second kind of cake requires 100g of flour and 50g of fat. Formulate this problem as a linear programming problem to find the maximum number of cakes that can be made from 5 kg of flour and 1 kg of fat, assuming that there is no shortage of the other ingredients used in making the cakes.

The above problem is to be formulated as a linear programming problem. Let x and y be the number of cake of kind first and second, respectively. Objective function to maximize the number of cakes $z = x + y$.

Which of the following is **not a valid** constraint for the given problem?

Options :

6406531175570. ❌ $2x + y \leq 50$

6406531175571. ✓ $x + 2y \leq 50$

6406531175572. ❌ $x \geq 0, y \geq 0$

6406531175573. ❌ $x + 2y \leq 40$

Sub-Section Number : 4

Sub-Section Id : 64065351217

Question Shuffling Allowed : Yes

Question Number : 434 Question Id : 640653354459 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Which of the following statement(s) is/are **true** ?

Options :

While inserting a new element in a max heap of n elements, binary search is performed on the path from the new node to the root to find the correct position of the new node. Number of

6406531175546. ❌ comparisons performed in this process is $O(\log^2 n)$

Given a binary search tree and a min-heap with the same constituent items, the min-heap is
6406531175547. ❌ more efficient for printing the items in ascending order.

When we implement Prim's algorithm using min-heap the time complexity is improved to
6406531175548. ✓ $O((m + n) \log n)$.

When we implement Dijkstra's algorithm using min-heap the time complexity is improved to
6406531175549. ✓ $O((m + n) \log n)$.

Sub-Section Number : 5

Sub-Section Id : 64065351218

Question Shuffling Allowed : Yes

Question Number : 435 Question Id : 640653354448 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

A hash table of size 8 (index 0 to 7) uses open addressing with hash function $h(k) = k \bmod 8$, and linear probing. The following elements are added into the hash table which was initially empty

22, 11, 85, 27, 34 and 50

The key value 50 is stored at which index of the hash table?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

7

Question Number : 436 Question Id : 640653354449 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Consider a **undirected graph** G with **65** edges with the least number of vertices possible. What will be the number of vertices in graph G ?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

12

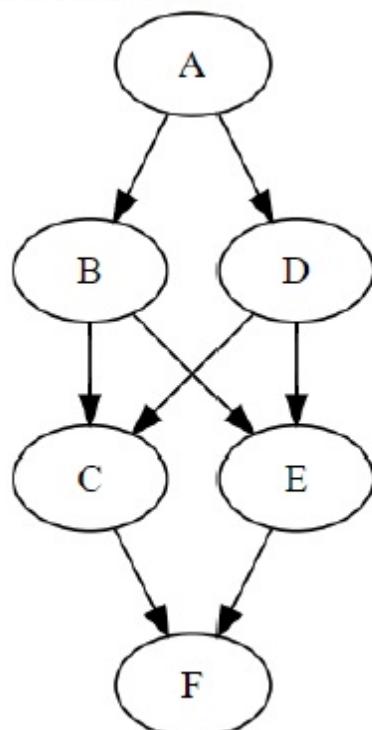
Question Number : 437 Question Id : 640653354452 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Consider the following directed graph.



The number of different topological orderings of the vertices of the graph is _____

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Number : 438 **Question Id :** 640653354453 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

Question Label : Short Answer Question

Consider the following adjacency matrix AMat of an undirected graph with 5 vertices.

$$\text{AMat} = \begin{pmatrix} 0 & 1 & 8 & 1 & 4 \\ 1 & 0 & 12 & 10 & 9 \\ 8 & 12 & 0 & 7 & 3 \\ 1 & 10 & 7 & 0 & 2 \\ 4 & 9 & 3 & 2 & 0 \end{pmatrix}$$

What is the cost of the minimum spanning tree for the given adjacency matrix of a graph?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

7

Question Number : 439 **Question Id :** 640653354461 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

Question Label : Short Answer Question

What will be the minimum number of nodes in an AVL tree of height 9? Consider that the height of the empty tree is 0.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

88

Question Number : 440 Question Id : 640653354464 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Let A_1, A_2, A_3, A_4 be 4 matrices with dimensions $(10 \times 5), (5 \times 20), (20 \times 10), (10 \times 15)$ respectively. What is the minimum number of scalar multiplications required to find the product $A_1 \times A_2 \times A_3 \times A_4$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2500

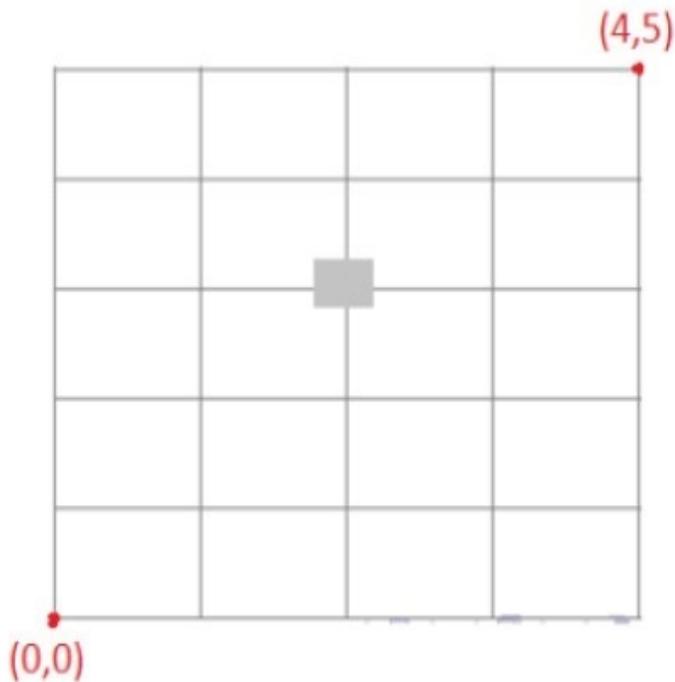
Question Number : 441 Question Id : 640653354465 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Short Answer Question

Consider the following grid.



How many unique paths are available from (0,0) to (4,5)? Condition is that you can only travel one step right or one step up at a time, and the gray box at intersection point (2,3) represents a blockage.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

66

Question Number : 442 **Question Id :** 640653354466 **Question Type :** SA **Calculator :** None

Response Time : N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

Question Label : Short Answer Question

Consider the Rabin-Karp algorithm using modulo arithmetic to match the pattern in base 10. Taking modulo $q = 11$, how many **false positives** matches does the Rabin-Karp matcher encounter while searching pattern 26 in the text 3141592653589793 ?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

System Commands

| | |
|---|-------------|
| Section Id : | 64065322258 |
| Section Number : | 14 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 21 |
| Number of Questions to be attempted : | 21 |
| Section Marks : | 100 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351219 |
| Question Shuffling Allowed : | No |

Question Number : 443 Question Id : 640653354471 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175582. ✓ Yes

6406531175583. ✗ No

Sub-Section Number : 2

Sub-Section Id : 64065351220

Question Shuffling Allowed : Yes

Question Number : 444 Question Id : 640653354476 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider that you have checked out a `version1` branch of a git repository on your local machine. You have modified a file named `getStudents.sh` and added a new file named `utilities.sh`. You have also run the `git add` command for the file `getStudents.sh`, but not on the newly added file `utilities.sh`.

What could be the correct output if you executed the command `git status` in this state locally on your repository.

Options :

```
$ git status
On branch version1
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   getStudents.sh
    new file:   utilities.sh
```

6406531175601. ✗

6406531175602. ✗

```
$ git status  
On branch version1  
Changes to be committed:  
(use "git restore --staged <file>..." to unstage)  
  new file: utilities.sh
```

Untracked files:

```
(use "git add <file>..." to include in what will be committed)  
  modified: getStudents.sh
```

```
$ git status  
On branch version1  
Changes to be committed:  
(use "git restore --staged <file>..." to unstage)  
  new file: utilities.sh
```

Changes not staged for commit:

```
(use "git add <file>..." to include in what will be committed)
```

6406531175603. ✘ modified: getStudents.sh

```
$ git status  
On branch master  
Changes to be committed:  
(use "git restore --staged <file>..." to unstage)  
  modified: getStudents.sh
```

Untracked files:

```
(use "git add <file>..." to include in what will be committed)
```

6406531175604. ✓ new file: utilities.sh

Question Number : 445 Question Id : 640653354477 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Which of the following options can be used to count the number of empty lines in the file `input.txt`?

Options :

6406531175605. ✘ `sed '^.*$ input.txt`

6406531175606. ❌ sed '^[]*\$' input.txt

6406531175607. ❌ sed '^[[]]*\$' input.txt

6406531175608. ✓ 'sed '^\$' input.txt

Question Number : 446 Question Id : 640653354485 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Select the command to find all files (but not directories) within the current directory that are modified in the last 3 days and delete them.

Options :

6406531175641. ✓ find . -type f -mtime -3 -delete

6406531175642. ❌ find / -type f -mtime -3 -delete

6406531175643. ❌ find .. -type f -atime -3 -delete

6406531175644. ❌ find . -type d -mtime -3 -delete

Question Number : 447 Question Id : 640653354490 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

What is the command to exit without saving a file in vim and Emacs respectively?

Options :

6406531175661. ✓ Vim: :q! Emacs: Ctrl-x Ctrl-c

6406531175662. ✗ Vim: :wq Emacs: Ctrl-x Ctrl-c

6406531175663. ✗ Vim: :q! Emacs: Ctrl-z

6406531175664. ✗ Vim: :wq Emacs: Ctrl-k Ctrl-z

Question Number : 448 Question Id : 640653354491 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a file `emp_details.txt` as:

```
$ cat emp_details.txt
A1998001,Ram Kumar,10,Male
B2000002,Sanjay Narayan,7,Male
B2000003,Srishti Rai,10,Female
E1997001,Manoj Pillai,12,Male
G1998001,Preeti Suresh,9,Female
G1999001,Leela L G,16,Female
```

What is the output of the command displayed below?

```
$ awk 'BEGIN{OFS=":";} /Male/ {if (NR>=3 && NR<=5) print NR,$1}' emp_details.txt
```

Options :

6406531175665. ✗ 4:E1997001

3:B2000003
4:E1997001

6406531175666. ✗ 5:G1998001

6406531175667. ✗ 4 E1997001

3:B2000003,Srishti

4:E1997001,Manoj

6406531175668. ✘ 5:G1998001,Preeti

6406531175669. ✓ 4:E1997001,Manoj

Sub-Section Number : 3

Sub-Section Id : 64065351221

Question Shuffling Allowed : Yes

Question Number : 449 Question Id : 640653354488 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the below command and the output.

```
$ ls -l
-rwxr--r-- 1 gu1 gu2 4096 October 21 06:03 config.sh
-r-xr--r-- 1 gu1 gu2 4096 October 21 06:03 start.sh
```

Which of the following commands will **not** overwrite the complete file.

Options :

6406531175652. ✓ touch config.sh

6406531175653. ✘ cat start.sh >config.sh

6406531175654. ✓ cat config.sh >start.sh

6406531175655. ✓ echo start.sh >>config.sh

6406531175656. ✓ echo config.sh >>start.sh

Sub-Section Number :

4

Sub-Section Id :

64065351222

Question Shuffling Allowed :

Yes

Question Number : 450 Question Id : 640653354472 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

```
awk '  
NR == FNR {  
    arr[$0]++  
}  
NR != FNR && !arr[$0] {  
    print $0  
}  
' file1 file2
```

What does the above awk command do?

Note: `NR` and `FNR` is the number of current record being processed overall(including all the input files) and in the current file respectively.

Options :

6406531175584. ✅ Prints the lines in file2 that are not present in file1

6406531175585. ❌ Prints the lines in file1 that are not present in file2

6406531175586. ❌ Prints the lines in file1

6406531175587. ❌ Prints the lines in file2

Question Number : 451 Question Id : 640653354473 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider a file `myfile` with the below contents,

```
welcome
(you)
\(all)
\(to\
\(the\
world
```

and the below command.

```
sed 's/(...)/{...}/' myfile
```

Select the correct output of the above sed command.

Note: Consider that the system on which this command is run uses the Basic Regular Expression engine(BRE).

Options :

```
welcome
(you)
\(all)
\(to\
\(the\)
```

6406531175588. ✘ world

```
welcome
{...}
\{...
\{...
\(the\)
```

6406531175589. ✓ world

```
welcome
{...}
\(all)
\(to\
\(the\)
```

6406531175590. ✘ world

6406531175591. ✘

```
{....}{....}e  
{....}  
\{....}  
\{....}  
\{....}{....}  
{...}ld
```

Question Number : 452 Question Id : 640653354474 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Consider a file named `myfile`. We want to merge every two consecutive lines starting from line 1 with a delimiter as `:` between the lines. Suppose the contents of `myfile` are given below.

```
name  
Divya  
location  
New Delhi  
occupation  
Teacher  
education-status  
Master of Education
```

Select the command that will merge the lines as described above, and prints to the terminal. The expected output on running the command for the above input should be.

```
name:Divya  
location:New Delhi  
occupation:Teacher  
education-status:Master of Education
```

Options :

```
while read line; do  
    echo "$line:"
```

6406531175592. ✘ done < myfile

6406531175593. ✘

```
while read line; do
    # with -n this will not add a new line character at the end
    echo -n "$line:"
done < myfile
```

```
while true; do
    read keyline
    read valueline
    [[ $keyline == "" || $valueline == "" ]] && break
    echo "$keyline:$valueline"
```

6406531175594. ✓ done < myfile

```
while true; do
    read keyline
    read valueline
    echo "$keyline:$valueline"
```

6406531175595. ✘ done < myfile

Question Number : 453 Question Id : 640653354482 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Described below are some options of the command `tar`, that can be useful for the below task.

Usage: `tar [OPTION...] [FILE]...`

GNU 'tar' saves many files together into a single tape or disk archive, and can restore individual files from the archive.

| | |
|-----------------------------------|------------------------------------|
| <code>-c, --create</code> | create a new archive |
| <code>-x, --extract, --get</code> | extract files from an archive |
| <code>-f, --file=ARCHIVE</code> | use archive file or device ARCHIVE |

Compression options:

| | |
|---|---|
| <code>-a, --auto-compress</code> | use archive suffix to determine the compression program |
| <code>-z, --gzip, --gunzip, --ungzip</code> | filter the archive through gzip |

Also, consider the state of the current working directory below.

```
$ ls -l
total 32
-rw-r--r-- 1 runner runner    0 Jun 23 08:00 '{'
drwxr-xr-x 1 runner runner   22 Jun 21 13:48 current
-rw-r--r-- 1 runner runner 10240 Jul 26 09:02 file1
-rw-r--r-- 1 runner runner    1 Jul 26 09:02 file2
-rw-r--r-- 1 runner runner    1 Jul 26 09:02 file3
-rw-r--r-- 1 runner runner   43 Jul 26 07:19 input.txt
-rw-r--r-- 1 runner runner   90 Jul 26 08:10 main.sh
drwxr-xr-x 1 runner runner   60 Jul 26 07:37 prices
```

Select the command that will **compress** only the files `file1`, `file2` and `file3` to the file `ar.gz`.

Options :

6406531175624. ✗ `tar -xf ar.gz file1 file2 file3`

6406531175625. ✗ `tar -acf ar.gz *`

6406531175626. ✗ `tar -zxf ar.gz file1 file2 file3`

6406531175627. ✓ `tar -zcf ar.gz file*`

Question Number : 454 Question Id : 640653354489 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Which of the following command will run the script /user/home/daily/sunday/run.sh on 1st day of every month at 10:00 AM.

Hint: Below is the description of the sequence in the cron job command. It tells at what date/time periodically the job needs to be executed.

```
* * * * * <Command(s) with argument>
| | | | |
| | | | | Command or Script to Execute
| | | |
| | | |
| | | |
| | | |
| | | Day of the Week(0-6)
| | |
| | | |
| | | Month of the Year(1-12)
| | |
| | | Day of the Month(1-31)
| | |
| Hour(0-23)
|
Min(0-59)
```

Options :

6406531175657. ❌ 0 22 1 * * /user/home/daily/sunday/run.sh

6406531175658. ✓ 0 10 1 * * /user/home/daily/sunday/run.sh

6406531175659. ❌ 0 22 * 1 0 /user/home/daily/sunday/run.sh

6406531175660. ❌ 0 10 * 1 0 /user/home/daily/sunday/run.sh

Sub-Section Number : 5

Sub-Section Id : 64065351223

Question Shuffling Allowed : Yes

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Select Question

Consider a file myfile located at /home/linda/myfile . The following commands are executed sequentially.

```
ln /home/linda/myfile /home/meena/myfile  
ln /home/meena/myfile /home/abdul/myfile  
ln /home/abdul/myfile /home/arun/myfile  
ln /home/arun/myfile /home/sanjay/myfile
```

Assuming all the directories in /home have read and execute permission for all the users. Select the command running which individually will make the link /home/sanjay/myfile a broken link.

Options :

6406531175596. ✘ rm /home/linda/myfile

6406531175597. ✘ rm /home/meena/myfile

6406531175598. ✘ mv /home/abdul/myfile /home/abdul/myfile_new

6406531175599. ✘ echo "LAST LINE" >>/home/arun/myfile

6406531175600. ✓ None of these.

Question Number : 456 Question Id : 640653354479 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Select Question

Select all the correct statements with respect to RAID.

Hint:

RAID 1 consists of an exact copy (or mirror) of a set of data on two or more disks

RAID 4 consists of block-level striping with a dedicated parity disk.

RAID 6 uses block striping with two parity blocks distributed across all member disks

Options :

6406531175613. ✓ RAID 1 can handle one disk failure without losing the data.

6406531175614. ✓ RAID 4 can handle one disk failure without losing the data.

6406531175615. ✓ RAID 6 can be deployed to achieve higher read speeds.

6406531175616. ✗ RAID 1 can be deployed to achieve higher write speeds.

Question Number : 457 Question Id : 640653354481 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 5

Question Label : Multiple Select Question

Select all the files that are either a soft link or a hard link. If linked these files are linked only with files in the current working directory.

```
$ ls -li
total 0
18748538 -rw-rw-r-- 3 user user 0 Jul 25 17:50 a
18748523 -rw-rw-r-- 1 user user 0 Jul 25 17:50 b
18748522 -rw-rw-r-- 5 user user 0 Jul 25 17:50 c
18748774 lrwxrwxrwx 1 user user 1 Jul 25 17:51 d -> c
18748823 -rw-rw-r-- 1 user user 0 Jul 25 17:51 e
18748823 -rw-rw-r-- 1 user user 0 Jul 25 17:51 f
```

Options :

6406531175618. ✗ a

6406531175619. ✓ b

6406531175620. ✗ c

6406531175621. ✓ d

6406531175622. ✓ e

6406531175623. ✓ f

Sub-Section Number :

6

Sub-Section Id :

64065351224

Question Shuffling Allowed :

Yes

Question Number : 458 Question Id : 640653354480 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Short Answer Question

The below examples show how the brace expansion work.

```
$ echo {a,b}{a,b}
aa ab ba bb
$ echo {a,b}{a,a} | sed 's/ /\n/g'
aa
aa
ba
ba
```

What will be the output of the below bash command? Enter only a number.

```
echo {b,b}{a,b,c,d} | sed 's/ /\n/g' | sort |uniq | wc -l
```

Hint: `sort` command sorts the values, `uniq` command outputs only distinct consecutive values.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Number : 459 Question Id : 640653354486 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Short Answer Question

How many sleep processes are active at the end of execution of for loop?

Note: kill % will kill the last job

```
for i in {1..11}; do
    sleep 100 &
    (( $i % 2 )) && kill %
done
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Sub-Section Number : 7

Sub-Section Id : 64065351225

Question Shuffling Allowed : Yes

Question Number : 460 **Question Id :** 640653354483 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction**

Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

The file input.txt has a list of dates in MM-DD-YYYY format. Which of the following commands can be used to convert it to YYYY:MM:DD format?

Options :

6406531175628. ✘ sed 's/\([0-9]{2}\)\([0-9]{2}\)\([0-9]{4}\)/\3:\1:\2' input.txt

6406531175629. ✘ sed 's/\([0-9]{2}\)-\([0-9]{2}\)-\([0-9]{4}\)/\2:\3:\1/' input.txt

6406531175630. ✓ sed 's/\([0-9]{2}\)-\([0-9]{2}\)-\([0-9]{4}\)/\3:\1:\2/' input.txt

6406531175631. ✘ sed 's/\([0-9]{2}\)\([0-9]{2}\)\([0-9]{4}\)/\2:\3:\1/' input.txt

Sub-Section Number : 8

Sub-Section Id : 64065351226

Question Shuffling Allowed : Yes

Question Number : 461 Question Id : 640653354478 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Select Question

Select the command that can be used to extract the hardware address from the output of the command `ip addr`.

```
$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
8637: eth0@if8638: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc tbf state UP group default qlen 1000
    link/ether 02:42:ac:12:00:53 brd ff:ff:ff:ff:ff:ff link-netnsid 0
    inet 172.18.0.83/16 brd 172.18.255.255 scope global eth0
        valid_lft forever preferred_lft forever
```

Consider the above command output, which of the following bash commands will give the output as below?

02:42:ac:12:00:53

Description of the option of `grep` command from its man page.

`-o, --only-matching`
Print only the matched (non-empty) parts of a matching line, with each such part on a separate output line.

Description of the option of `sed` command from its man page.

`-n, --quiet, --silent`
suppress automatic printing of pattern space

Note: There are no tabs in the output of the command `ip addr` and the command `sed 's/^ *//'` will delete all the spaces at the start of every line.

Options :

6406531175609. ✘ `ip addr | grep -o '.....:.....:.....'`

6406531175610. ✓ `ip addr | sed -n '/ether/ p' | grep -o '.....:.....:.....' | head -1`

6406531175611. ✓ `ip addr | sed 's/^ *//' | grep 'ether' | cut -d' ' -f2`

6406531175612. ✘ `ip addr | sed 's/^ *//' | cut -d' ' -f2 | grep 'ether'`

Question Number : 462 Question Id : 640653354487 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 6

Question Label : Multiple Select Question

Consider the below commands that are already run in the current working directory.

```
$ ls -l
-rw-r--r-- 1 ind ind 325 Jul 22 15:39 script1.sh
-rwxr--r-- 1 ind ind 633 Jul 22 01:15 script2.sh
-rw-r--r-- 1 ind ind 33 Jul 22 01:15 script3.sh
$
$echo $PATH
:/usr/local/sbin:/usr/local/bin:/usr/sbin:/home/commands:/usr/bin:/sbin:/bin
$
$ chmod 777 script3.sh; mv script3.sh /home/commands/
$ chmod 777 script1.sh; cp script1.sh /home/bin/
```

Now, which of the following commands will run successfully on the terminal under the current working directory and return with exit code 0.

Options :

6406531175646. ✓ script3.sh

6406531175647. ✗ script1.sh

6406531175648. ✗ ./script1.sh

6406531175649. ✓ ./script2.sh

6406531175650. ✗ bash script3.sh

6406531175651. ✓ bash script1.sh

Sub-Section Number :

9

Sub-Section Id :

64065351227

Question Shuffling Allowed :

Yes

Question Number : 463 Question Id : 640653354484 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 8

Question Label : Multiple Select Question

Consider some pattern matching criteria as:

- Should not contain anything except digits on the line.
- Should match AA, aa, Aa or aA, but not AAA, Aaa, AaaA etc.
- Should match any word of two characters of which one is a digit and no restriction on the other character.
- The line should not start with the digit 0 and should end with the character dot(.)

Select the regular expressions from below which will match according to at least one criteria above correctly. The regular expressions below are written to be run with the egrep command that uses the Extended regular expression (ERE) engine.

Options :

6406531175632. ❌ aa|Aa|aA|AA

6406531175633. ❌ \b.[0-9].\b

6406531175634. ✓ ^[^0].*\\$.

6406531175635. ✓ \b[Aa][Aa]\b

6406531175636. ❌ !0.\\$

6406531175637. ❌ ^[0-9]+

6406531175638. ✓ ^[0-9][0-9]*\\$

6406531175639. ❌ ^!0.*\\$.

TDS

| | |
|---|-------------|
| Section Id : | 64065322259 |
| Section Number : | 15 |
| Section type : | Online |
| Mandatory or Optional : | Mandatory |
| Number of Questions : | 46 |
| Number of Questions to be attempted : | 46 |
| Section Marks : | 46 |
| Display Number Panel : | Yes |
| Group All Questions : | No |
| Enable Mark as Answered Mark for Review and Clear Response : | Yes |
| Maximum Instruction Time : | 0 |
| Sub-Section Number : | 1 |
| Sub-Section Id : | 64065351228 |
| Question Shuffling Allowed : | No |

Question Number : 464 Question Id : 640653354492 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL: TOOLS IN DATA SCIENCE"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531175670. ✓ Yes

6406531175671. ✗ No

Sub-Section Number : 2

Sub-Section Id : 64065351229

Question Shuffling Allowed : Yes

Question Number : 465 Question Id : 640653354493 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The analysis metric slope can be observed through which of the following ways?

Options :

6406531175672. ✗ Trend Line in Line Chart

6406531175673. ✗ SLOPE function

6406531175674. ✓ Both Trend Line in Line Chart and SLOPE function

6406531175675. ✗ None of these

Question Number : 466 Question Id : 640653354494 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Quill provides the option to turn on/off, for displaying the individual comments from the narrative generation process?

Options :

6406531175676. ✓ TRUE

6406531175677. ✗ FALSE

Question Number : 467 Question Id : 640653354495 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

We are analyzing how much the use of fertilizers affects the agricultural yield of the farmers.

Which Excel function would you use as a starting point in this analysis?

Options :

6406531175678. ❌ STDEV.P()

6406531175679. ❌ STDEV.S()

6406531175680. ✓ SLOPE()

6406531175681. ❌ EXACT()

Question Number : 468 Question Id : 640653354496 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Subjectivity score in TextBlob ranges from _____.

Options :

6406531175682. ✓ 0 to 1

6406531175683. ❌ -1 to +1

6406531175684. ❌ -inf to +inf

6406531175685. ❌ 0 to inf

6406531175686. ❌ 0 to 10

Question Number : 469 Question Id : 640653354497 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Flourish cannot be used to create animated bar charts.

Options :

6406531175687. ✘ TRUE

6406531175688. ✓ FALSE

Question Number : 470 Question Id : 640653354498 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which piece of code below will extract details of all Bollywood movies that were released in Jan - March 2009 and later prints out only those rows where the respective movie was categorized only as a Drama?

Options :

```
import requests
import pandas as pd
from bs4 import BeautifulSoup
website_url=requests.get('https://web.archive.org/web/20220429
040949/https://en.wikipedia.org/wiki/List_of_Hindi_films_of_2009').t
ext
soup = BeautifulSoup(website_url,'html.parser')
required_table = soup.find_all('table')[3]
df = pd.read_html(str(required_table))
df=pd.DataFrame(df[0])
df[df['Genre'].isin(['Drama'])]
```

6406531175689. ✓

```
import requests
import pandas as pd
from bs4 import BeautifulSoup
website_url=requests.get('https://web.archive.org/web/20220429
040949/https://en.wikipedia.org/wiki/List_of_Hindi_films_of_2009').t
ext
soup = BeautifulSoup(website_url,'html.parser')
required_table = soup.find_all('table', "January-March")
df = pd.read_html(str(required_table))
df=pd.DataFrame(df[0])
df[df['Genre'].isin(['Drama'])]
```

6406531175690. ✘

6406531175691. ✘

```
import requests
import pandas as pd
from bs4 import BeautifulSoup
website_url=requests.get('https://web.archive.org/web/20220429040949/https://en.wikipedia.org/wiki/List_of_Hindi_films_of_2009').text
soup = BeautifulSoup(website_url,'html.parser')
required_table = soup.find_all('table', id = "January-March")
df = pd.read_html(str(required_table))
df=pd.DataFrame(df[0])
df[df['Genre'].isin(['Drama'])]
```

```
import requests
import pandas as pd
from bs4 import BeautifulSoup
website_url=requests.get('https://web.archive.org/web/20220429040949/https://en.wikipedia.org/wiki/List_of_Hindi_films_of_2009').text
soup = BeautifulSoup(website_url,'html.parser')
required_table = soup.find_all('table')[5]
df = pd.read_html(str(required_table))
df=pd.DataFrame(df[0])
df[df['Genre'].isin(['Drama'])]
```

6406531175692. ✘

Question Number : 471 Question Id : 640653354500 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A very large Matrix **A** has a lot of zero entries in it. Which function from the *scipy* library is useful in efficient storage of such a matrix **A**?

Options :

6406531175697. ✓ `csr_matrix`

6406531175698. ✘ `interpolate`

6406531175699. ✘ `compressed_mat`

6406531175700. ✘ `zip_mat`

Question Number : 472 Question Id : 640653354501 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Kumu is a tool that allows you to (select the most appropriate answer):

Options :

6406531175701. ✓ Visualize complex network data

6406531175702. ✗ create stunning dashboards for large projects

6406531175703. ✗ merge Comicgen characters into a comic

6406531175704. ✗ Narrate data stories

Question Number : 473 Question Id : 640653354502 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following Python libraries has functions and tools that are useful in the analysis of large graphs?

Options :

6406531175705. ✓ scikit-network

6406531175706. ✗ pandas-network

6406531175707. ✗ numpy-network

6406531175708. ✗ pd-network

Question Number : 474 Question Id : 640653354503 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following Python libraries has functions extensively written to perform numerical operations?

Options :

6406531175709. ✘ csr_matrix

6406531175710. ✓ numpy

6406531175711. ✘ seaborn

6406531175712. ✘ itertools

Question Number : 475 Question Id : 640653354507 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

You developed a sudden interest in English Premier League. Post the TDS course, you wanted to perform an analysis on all teams which played EPL from the year 1992. You performed PDF scraping using ‘tabula’ and appended every year standings of teams one below the other and saved as a single csv file. For looking at aggregating at various levels (viz Year wise, Team wise) the following can be used in Excel:

Options :

6406531175721. ✘ Pilot Table

6406531175722. ✓ Pivot Table

6406531175723. ✘ Pivol Table

6406531175724. ✘ None of these

Question Number : 476 Question Id : 640653354508 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Assume you have data with a column “Direction” which takes the values “Left”, “Right”. If you had used one hot encoding, the new columns added would be:

Options :

6406531175725. ✓ Direction_Left, Direction_Right

6406531175726. ✘ Left_Direction, Right_Direction

6406531175727. ✘ Left-Direction, Right-Direction

6406531175728. ✘ Direction-Left, Right-Direction

Question Number : 477 Question Id : 640653354509 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

One of quick ways to generate a descriptive stats file for variables along with correlation is to use

Options :

6406531175729. ✓ pandas_profiling

6406531175730. ✘ profiling_pandas

6406531175731. ✘ describe_dataset

6406531175732. ✘ Dataframe_profile

Question Number : 478 Question Id : 640653354510 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

You decide to use keras to classify images into one of the following categories: cat, dog, bull.

Which of the following loss functions from *Keras* would you pick for the task?

Options :

6406531175733. ✘ binary_crossentropy

6406531175734. ✓ categorical_crossentropy

6406531175735. ✘ mean_squared_error

6406531175736. ✘ mean_absolute_error

Question Number : 479 Question Id : 640653354511 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Logical calculations in tableau helps to determine if a certain condition is true or false. Is the following expression valid?

```
IF [Profit] > 0 THEN 'Profitable' ELSEIF [Profit] = 0 THEN  
'Breakeven' ELSE 'Loss' END
```

Options :

6406531175737. ✓ TRUE

6406531175738. ✗ FALSE

Question Number : 480 Question Id : 640653354512 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Identify which of the following statements is/are TRUE

1. A story contains a single view along with shelves, cards, legends, and the Data and Analytics panes in its side bar.
2. A worksheet contains a sequence of stories that work together to convey information
3. A dashboard is a collection of views from multiple worksheets

Options :

6406531175739. ✗ 1 Only

6406531175740. ✓ 3 Only

6406531175741. ✗ 2 & 3 Only

6406531175742. ✗ 1 & 2 Only

Question Number : 481 Question Id : 640653354513 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The dataset consists of geographic, demographic information about countries and their respective GDPs. You would like to visualize this data and study the relationship between the location of countries and their GDPs. You decide to use Tableau to visualize the dataset. But you would also like to generate a summary of the data. Choose the most suitable answer among the given options.

Options :

6406531175743. ✓ The summary can be generated using Quill and this is possible because Quill can be used as an extension in Tableau.

6406531175744. ✗ Tableau can be used for visualization. But Quill is incompatible with Tableau.

6406531175745. ✗ Quill does not support generation of summary. Therefore using other visualization tools such as Tableau would work.

6406531175746. ✗ None of the options are appropriate for the generation of summary for the given question.

Question Number : 482 Question Id : 640653354514 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

What are the two outputs provided by the Excel Azure Machine Learning plugin?

Options :

6406531175747. ✗ Percentage, Labels

6406531175748. ✗ Sentiment, Percentage

6406531175749. ✓ Sentiment, Score

6406531175750. ✗ Score, Labels

Question Number : 483 Question Id : 640653354515 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Provided below is an incomplete code snippet that enables you to compute distance between two locations. Choose the most appropriate option that can be used in place of <missing line> to compute the distance. Assume the coordinates of location one is stored in the variable "loc1" and the coordinates of location 2 is stored in the variable "loc2".

Code Snippet:

```
distances_km = []

for row in df.itertuples(index=False):
    distances_km.append(
        <missing line>
    )

df['Distance'] = distances_km
df.head(10)
```

Options :

- 6406531175751. ❌ geopy.distance(loc1, loc2).km
- 6406531175752. ❌ geopy.distance(loc1, loc2).km.km
- 6406531175753. ✓ geopy.distance.distance(loc1, loc2).km
- 6406531175754. ❌ geopy.distance.distance.distance(loc1_coord, loc2_coord).km

Question Number : 484 Question Id : 640653354516 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Provided below is a snippet of the code block of HTML tags from a website providing weather forecast. Your goal is to scrape the high and low values for the 10-day temperature forecast.

```

<div class="wr-day-temperaturehigh">
    <span class="wr-day-temperature__high-label wr-hide-visually">High</span>
        <span class="wr-day-temperature__high-value">
            <span class="wr-value--temperature ">
                <span class="wr-value--temperature--c">31°</span>
                <span class="wr-hide"> </span>
                <span class="wr-value--temperature--f">87°</span>
            </span>
        </span>
    </div>
<div class="wr-day-temperaturelow">
    <span class="wr-day-temperature__low-label wr-hide-visually">Low</span>
        <span class="wr-day-temperature__low-value">
            <span class="wr-value--temperature ">
                <span class="wr-value--temperature--c">21°</span>
                <span class="wr-hide"> </span>
                <span class="wr-value--temperature--f">71°</span>
            </span>
        </span>
    </div>

```

Also provided below, is the python code to extract values from the tags. But the tags represented as <A> and are missing. Choose the most appropriate tag that will get you the high and low values for the 14-day temperature forecast..

```

#Daily High Values
daily_high_values = soup.find_all('span', attrs={'class': '<A>'})

#Daily Low Values
daily_low_values = soup.find_all('span', attrs={'class': '<B>'})

```

Options :

6406531175755. ❌ <A> = wr-value--temperature--f
 <A> = wr-value--temperature--c

6406531175756. ❌ = wr-day--temperature--c
 = wr-day--temperature--f

6406531175757. ✓ <A> = wr-day-temperaturehigh
 <A> = wr-day-temperaturelow

6406531175758. ❌ <A> = low-label wr-hide-visually
 = high-label wr-hide-visually

Question Number : 485 Question Id : 640653354517 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The final output from the BBC Weather Location Service API is in CSV format:

Options :

6406531175759. ✘ TRUE

6406531175760. ✓ FALSE

Question Number : 486 Question Id : 640653354518 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which among the following properties are returned by the sentiment function of the TextBlob library?

Options :

6406531175761. ✘ Score, Polarity

6406531175762. ✘ Polarity, Negativity

6406531175763. ✘ Median, Subjectivity

6406531175764. ✓ Polarity, Subjectivity

Question Number : 487 Question Id : 640653354519 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Subjectivity score ranges between -1 to +1.

Options :

6406531175765. ✘ TRUE

6406531175766. ✓ FALSE

Question Number : 488 Question Id : 640653354520 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A subjectivity score of 0.4 means that the text statement:

Options :

6406531175767. ✘ has a positive sentiment

6406531175768. ✘ has a negative sentiment

6406531175769. ✘ is more of an opinion statement

6406531175770. ✓ is more of a factual statement

Question Number : 489 Question Id : 640653354521 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A polarity score of 0.1 means that the text statement:

Options :

6406531175771. ✓ has a positive sentiment

6406531175772. ✘ has a negative sentiment

6406531175773. ✘ is more of an opinion statement

6406531175774. ✘ is more of a factual statement

Question Number : 490 Question Id : 640653354522 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Provided below is a snapshot of the dataset which consists of movie reviews and respective labels.

| | A | B |
|----|-----------|--|
| 1 | sentiment | review |
| 2 | positive | One of the other reviewers has mentioned |
| 3 | positive | A wonderful little production. |
| 4 | positive | I thought this was a wonderful way to spe |
| 5 | negative | Basically there's a family where a little bo |
| 6 | positive | Petter Mattei's "Love in the Time of Money" |
| 7 | positive | Probably my all-time favorite movie, a st |
| 8 | negative | This show was an amazing, fresh & innova |
| 9 | negative | Encouraged by the positive comments abo |
| 10 | positive | If you like original gut wrenching laughter |
| 11 | negative | Phil the Alien is one of those quirky films |

To compute the sentiment scores the Azure Machine Learning add-in requires input and output values. In the figure provided below the input and output cells need to be populated with appropriate values to obtain sentiment scores.

2. PREDICT

Input: input1

Type range or click button to select 

My data has headers

[Use sample data](#) 

Output: output1

Enter output cell (e.g. A20)

Include headers

Choose the most appropriate option that enables you to predict sentiment scores using the Excel Azure Machine Learning add-in.

Options :

Input: Sheet1!A1:A11

6406531175775. ✘

Output: Sheet1!C1

Input: Sheet1!B1:B11

6406531175776. ✓

Output: Sheet1!C1

Question Number : 491 Question Id : 640653354523 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

We are interested in analyzing the effect of money spent on TV advertising on the sales volume of a product. Which Excel function would you use as a starting point in this analysis?

Options :

6406531175777. ✘ STDEV.P()

6406531175778. ✘ STDEV.S()

6406531175779. ✓ SLOPE()

6406531175780. ✘ EXACT()

Question Number : 492 Question Id : 640653354524 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

We have predictions (y_{hat}) on a train dataset of 100 records. Let y be the true value. We are interested in calculating $\text{median}(|y_1 - y_{\text{hat}}_1|, |y_2 - y_{\text{hat}}_2|, \dots, |y_{100} - y_{\text{hat}}_{100}|)$. Which of the following functions will help you in achieving this easily?

Options :

6406531175781. ✘ from sklearn.metrics import mean_absolute_error

6406531175782. ✓ from sklearn.metrics import median_absolute_error

6406531175783. ✘ from sklearn.metrics import median_absolute_percentage_error

6406531175784. ✘ from sklearn.metrics import average_absolute_percentage_error

Question Number : 493 Question Id : 640653354525 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

You are working on a piece of code that classifies different vehicles into its respective class (car, LCV, truck, earth movers). Which of the following loss functions from *Keras* would you pick for the task?

Options :

6406531175785. ✘ binary_crossentropy

6406531175786. ✓ categorical_crossentropy

6406531175787. ✘ mean_squared_error

6406531175788. ✘ Mean_absolute_error

Question Number : 494 Question Id : 640653354526 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Tableau automatically divides the data fields into two categories. What are they?

Options :

6406531175789. ✘ Measures and categories

6406531175790. ✓ Dimensions and Measures

6406531175791. ✘ Columns and rows

6406531175792. ✘ Matrices and columns

Question Number : 495 Question Id : 640653354527 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which Extension in Tableau transforms visualizations into narratives?

Options :

6406531175793. ✘ Narrator

6406531175794. ✘ Navigator

6406531175795. ✓ Quill

6406531175796. ✘ Quora

Question Number : 496 Question Id : 640653354528 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

If you want to create comical characters while building business stories, which tool would be helpful.?

Options :

6406531175797. ✘ Cartoongen

6406531175798. ✘ Image size

6406531175799. ✓ Comicgen

6406531175800. ✘ Gentoon

Question Number : 497 Question Id : 640653354529 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following is used to build and host web applications?

Options :

6406531175801. ✓ Streamlit for building web applications, Heroku for hosting web applications

6406531175802. ❌ Heroku for building web applications, Streamlit for hosting web applications
6406531175803. ❌ Streamlit for building web applications, Streamlit for hosting web applications
6406531175804. ❌ Heroku for building web applications, Heroku for hosting web applications

Question Number : 498 Question Id : 640653354530 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which among the following excel charts is the most suitable for detecting outliers in the data?

Options :

6406531175805. ❌ Bar chart

6406531175806. ❌ Line chart

6406531175807. ✓ Box and Whisker chart

6406531175808. ❌ Histogram

Question Number : 499 Question Id : 640653354531 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following libraries is used to construct API urls?

Options :

6406531175809. ✓ Urllib

6406531175810. ❌ BeautifulSoup

6406531175811. ❌ Requests

6406531175812. ❌ Pandas

Question Number : 500 Question Id : 640653354532 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Which of the following tabs is used to identify API calls in the Inspect element in any browser?

Options :

6406531175813.  Network

6406531175814.  Elements

6406531175815.  Console

6406531175816.  Sources

Question Number : 501 Question Id : 640653354533 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Google Studio is a tool that allows you to

Options :

6406531175817.  merge Comicgen characters into a comic

6406531175818.  visualize complex network data

6406531175819.  create dashboards for small scale projects

6406531175820.  Edit photographs and videos

Question Number : 502 Question Id : 640653354535 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

csr_matrix from the scipy library:

Options :

6406531175825.  always helps reduce matrix space

6406531175826. ✓ helps reduce matrix space when there are a lot of zero entries in the matrix

6406531175827. ✗ helps reduce matrix space when there are a lot of negative entries in the matrix

6406531175828. ✗ makes matrix multiplication more meaningful and powerful

Question Number : 503 Question Id : 640653354536 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

classification_report function from the sklearn.metrics module

Options :

6406531175829. ✗ builds a decision tree classifier and prints the accuracy of the classifier

6406531175830. ✗ reports the root mean square error of the model

6406531175831. ✗ runs different classification models and compares the results

6406531175832. ✓ builds a text report displaying the main classification metrics

Question Number : 504 Question Id : 640653354537 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

pycaret is a

Options :

6406531175833. ✗ Visualization tool

6406531175834. ✗ Dashboard helper

6406531175835. ✓ low-code machine learning library

6406531175836. ✗ Data cleaning solution

Question Number : 505 Question Id : 640653354538 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

We are interested in fitting an ARIMA model to our time series data. Specifically, we are interested in a moving average model of 0, setting a lag value of 4 for autoregression, and a difference order of 1. Which of the following gives you such a model?

Options :

6406531175837. ❌ ARIMA(..., trend = (4,1,0))

6406531175838. ✓ ARIMA(..., order = (4,1,0))

6406531175839. ❌ ARIMA(..., order = (0,4,1))

6406531175840. ❌ ARIMA(..., trend = (0,4,1))

Question Number : 506 Question Id : 640653354539 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

Scikit-learn has a DecisionTreeClassifier module that is useful in building decision tree classifiers. Suppose, our dataset is imbalanced in class. Which feature in the DecisionTreeClassifier() will help us tackle this problem?

Options :

6406531175841. ❌ random_state

6406531175842. ❌ min_sample_split

6406531175843. ❌ class_balance

6406531175844. ✓ class_weight

Sub-Section Number : 3

Sub-Section Id : 64065351230

Question Shuffling Allowed : Yes

Question Number : 507 Question Id : 640653354499 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

Comicgen is a useful tool in narrating data stories using comics. Which of the following are capabilities of comicgen?

Options :

6406531175693. ✓ Comicgen can create comic characters

6406531175694. ✓ Comicgen provides options to custom create different comic characters and their emotions and pose

6406531175695. ✓ Comicgen can be easily integrated into Google sheets or Excel to narrate your data stories

6406531175696. ✖ You can type in your data story into comicgen to get your comic in return

Question Number : 508 Question Id : 640653354534 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Select Question

scikit-network package contains functions for (pick all correct sentences):

Options :

6406531175821. ✖ analysis of faults in a computer network

6406531175822. ✓ social network analysis

6406531175823. ✓ analysis of large graphs

6406531175824. ✖ enhancing one's social network

Sub-Section Number : 4

Sub-Section Id : 64065351231

Question Shuffling Allowed : No

Question Id : 640653354504 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A

Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (509 to 510)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 509 Question Id : 640653354505 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

You decided to perform analysis of the IPL teams year on year. You downloaded the teams standings table which got downloaded as a PDF. You wish to convert to a csv file for further analysis in Excel. The following method in 'tabula' can be used for the same:

Options :

6406531175713. ✓ convert_into

6406531175714. ✗ convert_file

6406531175715. ✗ convert_all

6406531175716. ✗ convert_csv

Question Number : 510 Question Id : 640653354506 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

From the converted csv file in previous question, you realize that the team 'Delhi Daredevil' has changed its name to 'Delhi Capital'. Using excel, you wish to replace the old name with a new name. It can be done in Excel using

Options :

6406531175717. ✓ Find and Replace

6406531175718. ✗ Finding and Replacing

6406531175719. ✎ Replace and Find

6406531175720. ✎ Search and Replace