

Sw Engg

Section Id :	64065364220
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	100
Display Number Panel :	Yes

Section Negative Marks : 0
Group All Questions : No
Enable Mark as Answered Mark for Review and Clear Response : No
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 640653134726
Question Shuffling Allowed : No

Question Number : 23 Question Id : 640653906735 Question Type : MCQ Calculator : Yes
Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL : SOFTWARE ENGINEERING (COMPUTER BASED EXAM)"

**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 :

6406533052125. ✓ YES

6406533052126. ✗ NO

Sub-Section Number : 2
Sub-Section Id : 640653134727
Question Shuffling Allowed : Yes

Question Number : 24 Question Id : 640653906736 Question Type : MCQ Calculator : Yes
Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following is the primary responsibility of the data scientists at a software company?

Options :

6406533052127. ✗ To communicate with users and create prototypes.

6406533052128. ✗ To shape the terms of service of the software product, software licenses, privacy policy etc.

6406533052129. ✓ To analyze data generated from various teams and users in order to assist the organization in making better decisions.

6406533052130. ✗ To address and resolve issues that clients encounter.

Question Number : 25 Question Id : 640653906737 Question Type : MCQ Calculator : Yes
Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following is the benefit of using project management tools?

Options :

6406533052131. ✖ It helps to document and archive the knowledge of one project that might be required in some other project.

6406533052132. ✔ It helps all members of the team to get a big picture as well as detailed view of progress.

6406533052133. ✖ It helps in easy migration of developers between different projects.

6406533052134. ✖ It helps the developers to become more productive by using tools like IDEs.

Question Number : 26 Question Id : 640653906743 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

What is velocity from the agile project estimation perspective?

Options :

6406533052155. ✖ Number of user stories per sprint

6406533052156. ✔ Number of points per sprint

6406533052157. ✖ The time required to complete an agile project

6406533052158. ✖ The point assigned to each user story

Question Number : 27 Question Id : 640653906750 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following diagrams models the sequence of message exchanges among parts of a system?

Options :

6406533052185. ✖ Class diagram

6406533052186. ✖ State machine diagram

6406533052187. ✖ Activity view

6406533052188. ✔ Interaction view

Question Number : 28 Question Id : 640653906752 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Which of the following types of software metrics considers the number of lines of code which include code, comments, white spaces etc.?

Options :

6406533052193. ✖ Cyclomatic complexity

6406533052194. ✔ Raw Metrics

6406533052195. ✖ Halstead's Metrics

6406533052196. ✖ None of these

Question Number : 29 Question Id : 640653906753 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Consider an eCommerce portal that has been integrated with a payment gateway with a set of APIs. Which of the following debugging strategies involves the task of searching the documentation and code examples to understand the correct use of the APIs?

Options :

6406533052197. ✖ Input manipulation

6406533052198. ✖ Backwards

6406533052199. ✖ Forwards

6406533052200. ✔ Blackbox debugging

Question Number : 30 Question Id : 640653906760 Question Type : MCQ Calculator : Yes

Correct Marks : 3

Question Label : Multiple Choice Question

Heroku and Google App Engine are examples of _____.

Options :

6406533052221. ✖ Bare metal server

6406533052222. ✖ Infrastructure-as-a-service

6406533052223. ✔ Platform-as-a-service

6406533052224. ✖ Software-as-a-service

Sub-Section Number :

3

Sub-Section Id :

640653134728

Question Shuffling Allowed :

Yes

Question Number : 31 Question Id : 640653906738 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Which of the following is true about the production environment of deployment?

Options :

6406533052135. ✖ It is primarily created for performing integration and system testing.

6406533052136. ✔ It is also known as live environment where all the users can interact with the deployed system.

6406533052137. ✖ It is the local environment for individual developers that provides IDEs and other tools.

6406533052138. ✖ It exactly resembles the production environment, and it runs on a remote machine.

Question Number : 32 Question Id : 640653906739 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

In which of the software deployment strategies are changes incrementally rolled out to a small subset of users?

Options :

6406533052139. ✖ Blue/Green deployment

6406533052140. ✔ Canary deployment

6406533052141. ✖ Versioned deployment

6406533052142. ✖ None of these

Question Number : 33 Question Id : 640653906742 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider an embedded project that has an estimated 3,00,000 lines of code.

The values for the constants in the COCOMO model for the different types of the project are as follows:

- Organic project: $a = 2.4$, $b = 1.05$
- Semi-organic project: $a = 3.0$, $b = 1.12$
- Embedded project: $a = 3.6$, $b = 1.20$

Considering that the salary of each staff is Rs. 50,000/-, what is the approximate cost of the project?

Options :

6406533052151. ✖ 4,80,00,000

6406533052152. ✖ 8,95,00,000

6406533052153. ✔ 16,90,00,000

6406533052154. ✖ 2,85,00,000

Question Number : 34 Question Id : 640653906744 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Suppose you are creating a prototype for a web application which is presented on multiple papers as handdrawn UIs of different screens.

In the above case, identify the type of prototype technique you have chosen.

Options :

6406533052159. ✖ Storyboards

6406533052160. ✔ Paper prototype

6406533052161. ✖ Digital mock-ups

6406533052162. ✖ Interactive prototype

Question Number : 35 Question Id : 640653906745 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Suppose a software organization is designing the UI of a web application for an employee payroll system. For all the icons on the buttons and links, they have chosen various animal pictures. Which one of the following UI evaluation heuristics would be missing in this design?

Options :

6406533052163. ✖ Flexibility

6406533052164. ✔ Recognition over recall

6406533052165. ✖ Clean and functional design

6406533052166. ✖ Freedom

Question Number : 36 Question Id : 640653906746 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider an EdTech company that decided to develop an educational portal based on GenAI services. However, there are some requirements that are ambiguous or conflicting. As a result, the company has arranged a meeting of all the managers of different departments to discuss the issues and requirements and reach some consensus on them. In the given scenario, which of the following requirement gathering techniques is in use?

Options :

6406533052167. ✖ Questionnaires

6406533052168. ✖ Interviews

6406533052169. ✔ Focus group

6406533052170. ✖ Documentations

Question Number : 37 Question Id : 640653906747 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Which of the SMART characteristics of user stories specifies that if the implementation of a user story is not possible in one iteration, then subdivide the story into smaller ones?

Options :

6406533052171. ✖ Specific

6406533052172. ✖ Measurable

6406533052173. ✔ Achievable

6406533052174. ✖ Relevant

6406533052175. ✖ Timeboxed

Question Number : 38 Question Id : 640653906748 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

A software company has to develop a job portal that will allow job seekers to apply for different organizations at different positions. Therefore, the entire task of the project is divided into different modules, and the interactions between the modules are outlined. Which phase of the SDLC is the software currently in?

Options :

6406533052176. ✖ Requirements gathering

6406533052177. ✔ Design

6406533052178. ✖ Development

6406533052179. ✖ Testing

6406533052180. ✖ Maintenance

Question Number : 39 Question Id : 640653906749 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a software is designed in the following manner:

- Each module has some functions which all are designed to achieve a single objective.
- Function calls between two different modules involve passing a large chunk of shared data.

Which of the following is true about the design of the software?

Options :

6406533052181. ✔ Has high coupling and high cohesion

6406533052182. ✖ Has high coupling and low cohesion

6406533052183. ✖ Has low coupling and high cohesion

6406533052184. ✖ Has low coupling and low cohesion

Question Number : 40 Question Id : 640653906754 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the Python function below.

```
def ssort(items, n):
    for it in range(size):
        min_i = it
        for i in range(it + 1, n):
            if items[i] < items[min_i]:
                min_i = i
        (items[it], items[min_i]) = (items[min_i], items[it])
```

What is the cyclomatic complexity of the function?

Options :

6406533052201. ✖ 2

6406533052202. ✖ 3

6406533052203. ✔ 4

6406533052204. ✖ 5

Question Number : 41 Question Id : 640653906761 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a mobile application for enhancing image quality. The image quality enhancement application is made up of several data filters. The filters are connected one after another. Each filter processes the data it receives and sends the output to the next filter in line. Which type of architecture is used to design the data processing software?

Options :

6406533052225. ✖ Client-server

6406533052226. ✔ Pipe and filter

6406533052227. ✖ Model-view-controller

6406533052228. ✖ Peer-to-peer

Sub-Section Number :

4

Sub-Section Id :

640653134729

Question Shuffling Allowed :

Yes

Question Number : 42 Question Id : 640653906741 Question Type : MCQ Calculator : Yes

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the following table for risk assessment of a software project.

Risk	Impact	Assessed risk
Personnel shortfall	1	0.6
Lack of experience building banking applications	2	0.8
Budget slippage	3	0.9
Product not competitive in the market	2	0.8

Which of the following risks is most probable to occur in the project?

Options :

6406533052147. ✔ Personnel shortfall

6406533052148. ✖ Lack of experience building banking applications

6406533052149. ✖ Budget slippage

6406533052150. ✖ Product not competitive in the market

Question Number : 43 Question Id : 640653906762 Question Type : MCQ Calculator : Yes Correct Marks : 5

Question Label : Multiple Choice Question

Consider the design of an e-shopping application. It has an **Order** class. In order to make payment for an order, the **Order** class interacts with **PaymentManager** class. Depending on the payment type selected by the customer, **PaymentManager** calls the payment method from **PayByCash** class or **PayByCheque** class. However, the designers want to add more payment types in the future without violating the open-close principle. Therefore, the designers plan to utilize a design pattern known as **X**. The designers have added an interface named **Payable** to the design, and any payment class, such as **PayByCash**, **PayByCheque**, and possibly **PayByUPI** or **PayByCard**, will need to implement this interface in the future. Instead of directly interacting with payment classes, the **PaymentManager** now interacts with the **Payable** interface, which enables the **PaymentManager** to use any payment class that is implementing the **Payable** interface.

Identify the design pattern referred to as **X**.

Options :

6406533052229. ✖ Iterator design pattern

6406533052230. ✖ Adapter design pattern

6406533052231. ✔ Strategy design pattern

6406533052232. ✖ Facade design pattern

Sub-Section Number :

5

Sub-Section Id :

640653134730

Question Shuffling Allowed :

Yes

Question Number : 44 Question Id : 640653906740 Question Type : MSQ Calculator : Yes Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are considered as the primary objective(s) of monitoring tools for enhancing the performance of web applications?

Options :

6406533052143. ✖ It stores the results of common operations in memory.

6406533052144. ✔ It helps to understand customer behaviour.

6406533052145. ✖ It compresses static pages.

6406533052146. ✔ It can be used to analyze page resources, find optimization suggestions, check SEO and accessibility metrics and calculate your performance score.

Question Number : 45 Question Id : 640653906759 Question Type : MSQ Calculator : Yes Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following code base in Python.

```
def findInterest(months):  
    if months <= 0:  
        print("invalid input")  
    elif months < 12:  
        return 0.05  
    elif months < 36:  
        return 0.07  
    else:  
        return 0.06
```

Identify the set(s) of valid test cases for function `findInterest` using the equivalence class technique.

Options :

6406533052217. ✖ {months = -4, months = 0, months = 25}

6406533052218. ✔ {months = -4, months = 4, months = 25, months = 48}

6406533052219. ✖ {months = -4, months = 4, months = 40, months = 48}

6406533052220. ✔ {months = -4, months = 0, months = 4, months = 25, months = 48}

Sub-Section Number :

6

Sub-Section Id :

640653134731

Question Shuffling Allowed :

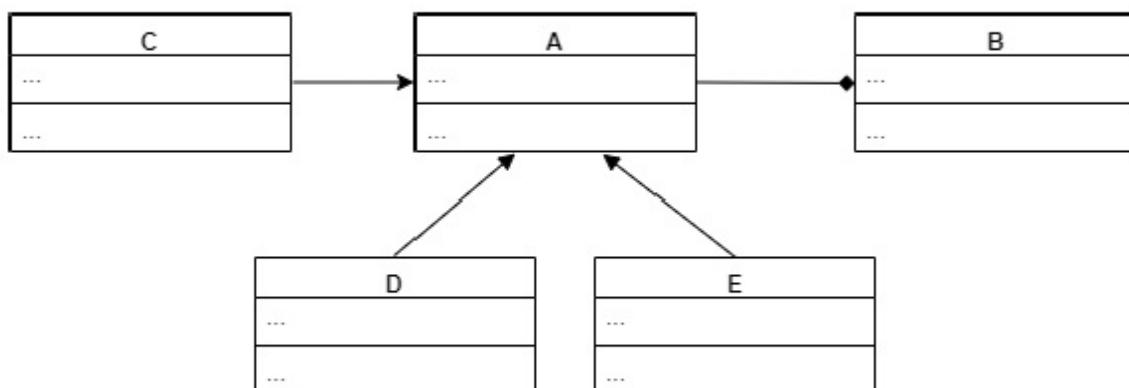
Yes

Question Number : 46 Question Id : 640653906751 Question Type : MSQ Calculator : Yes

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the class diagram given below.



Which of the following statement(s) are true about the given class diagram?

Options :

6406533052189. ✖ A inherits from B

6406533052190. ✔ B is composition of A

6406533052191. ✖ B is associated C

6406533052192. ✓ D and E inherit from A

Sub-Section Number :

7

Sub-Section Id :

640653134732

Question Shuffling Allowed :

No

Question Id : 640653906755 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None

Question Numbers : (47 to 49)

Question Label : Comprehension

Consider the Python function below.

```
def fact(n):  
    f = 1  
    if n < 0:  
        return -1    #invalid  
    else:  
        if n == 0 or n == 1:  
            f = 1  
        else:  
            for i in range(2, n):  
                f *= i  
    return f
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 47 Question Id : 640653906756 Question Type : MSQ Calculator : Yes Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Identify the set(s) of valid test cases for branch coverage.

Options :

6406533052205. ✗ {-5, 5}

6406533052206. ✓ {-5, 0, 2, 5}

6406533052207. ✗ {-5, 2, 5, 10}

6406533052208. ✓ {-5, 0, 1, 2, 5}

Question Number : 48 Question Id : 640653906757 Question Type : MCQ Calculator : Yes Correct Marks : 4

Question Label : Multiple Choice Question

Identify the set(s) of valid test cases for multiple condition coverage.

Options :

6406533052209. ✖ {-5, 5}

6406533052210. ✖ {-5, 0, 2, 5}

6406533052211. ✖ {-5, 2, 5, 10}

6406533052212. ✔ {-5, 0, 1, 2, 5}

Question Number : 49 Question Id : 640653906758 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

Identify the number of linearly independent paths in the code base.

Options :

6406533052213. ✖ 2

6406533052214. ✖ 3

6406533052215. ✔ 4

6406533052216. ✖ 5