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 QUIZ 1 DEGREE QPG3 16 Oct 2022
Subject Name :	2022 Oct: IIT M QUIZ 1 DEGREE QPG3
Creation Date :	2022-10-10 18:15:47
Duration :	240
Total Marks :	270
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 :	6406539336
Group Maximum Duration :	0
Group Minimum Duration :	90
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	270
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

Speech Tech

Section Id :	64065324013
Section Number :	1

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	4
Number of Questions to be attempted :	4
Section Marks :	25
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 :	64065356012
Question Shuffling Allowed :	No

Question Number : 1 Question Id : 640653388956 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 "DEGREE LEVEL: SPEECH TECHNOLOGY"

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 :

6406531292682. ✔ Yes

6406531292683. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065356013
Question Shuffling Allowed :	Yes

Question Number : 2 Question Id : 640653388957 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

1. (1 point) In K-means, the number of clusters (K) changes as the algorithm reaches to convergence.

   A. True

   B. False

2. (1 point) A uni-variate Gaussian distribution is completely defined by the following parameters.

   A. mean, variance

   B. median, covariance

   C. mode, variance

   D. mode, covariance

3. (1 point) K-Means will always find the global minimum.

   A. True

   B. False

4. (3 points) Consider the set of training data below, and two clustering algorithms: K-Means and a Gaussian Mixture Model (GMM) trained using EM. Will these two clustering algorithms produce the same cluster centers (means) for this data set? Explain why or why not.

Options :

6406531292684. ✔ I have written answers on the answer sheets

6406531292685. ✖ Not applicable

Sub-Section Number :	3
Sub-Section Id :	64065356014
Question Shuffling Allowed :	Yes

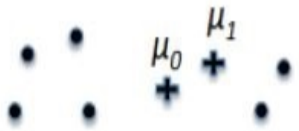
Question Number : 3 Question Id : 640653388958 Question Type : MCQ Is Question

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

Correct Marks : 11

Question Label : Multiple Choice Question

5. (3 points) Assume there are two Gaussian components in the GMM; μ_0, μ_1, σ_0 and σ_1 define means and variances of these two components, π_0 and $(1-\pi_0)$ denote the mixture proportions of the two Gaussians (i.e. $p(x) = \pi_0 N(\mu_1, \sigma_1) + (1-\pi_0)N(\mu_2, \sigma_2)$).



(a) (1 point) Draw on the figure the directions in which μ_0 and μ_1 will move during the next M-step.

(b) (2 points) Will the estimate of π_0 increase or decrease on the next EM step? Explain your reasoning in one sentence.

6. (5 points) We saw two approaches to solve the sequence prediction problem: greedy and viterbi. Consider a weather sequence prediction problem, assuming first-order markov chain. Given that Sunny weather was observed on Day-0, compute the best possible weather forcast sequence for the next three days using 1) greedy approach, 2) viterbi approach.

Hint: For viterbi keep a track of path taken to calculate $\gamma_A(B)$, where $\gamma_A(B)$ denotes maximum probability of reaching state A at time step B.

		Today		
		Sunny	**Cloudy**	**Rainy**
Yesterday	**Sunny**	0.5	0.375	0.125
	Cloudy	0.25	0.125	0.625
	Rainy	0.25	0.075	0.675

7. (3 points) We saw two approaches for vector quantization, namely: k-means & Linde-Buzo-Gray Algorithm (LBG). Explain in detail the clustering mechanism used in these two algorithms, highlighting differences in their approach.

Options :

6406531292686. ✔ I have written answers on the answer sheets

6406531292687. ✖ Not applicable

Sub-Section Number : 4

Sub-Section Id : 64065356015

Question Shuffling Allowed : Yes

Question Number : 4 Question Id : 640653388959 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 8

Question Label : Multiple Choice Question

8. (1 point) For perfect reconstruction of a bandlimited signal, the sampling frequency must be _____.

   A. equal to twice the maximum frequency

   B. greater than equal to twice the maximum frequency

   C. lesser than equal to twice the maximum frequency

   D. none of the above

9. (3 points) For each of the following discrete time system, comment upon the following system properties (1) linear/non-linear, (2) time-invariant/time-variant, and (3) causal/anti-causal.

   (a) (1.5 points) $y[n] = nx[n]$

   (b) (1.5 points) $y[n] = e^{x[n]}$

10. (1 point) Any point in a 3-D space can be represented as a _____ combination of its basis functions.

11. (1 point) Let $f_X(x)$ be the probability distribution function for random variable X then

$$\int_{-\infty}^{\infty} f_X(x)dx = ?$$

   A. 1

   B. ∞

   C. 0

   D. none of the above

12. (1 point) The Gaussian curve is always symmetrical about _____.

   A. 1

   B. 0

   C. standard deviation

   D. mean

13. (1 point) Psychophysical equivalent of frequency is _____.

Options :

6406531292688. ✔ I have written answers on the answer sheets

6406531292689. ✖ Not applicable

Section Id :	64065324014
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	11
Number of Questions to be attempted :	11
Section Marks :	20
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 :	64065356016
Question Shuffling Allowed :	No

Question Number : 5 Question Id : 640653388960 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 "DEGREE LEVEL: INDUSTRY 4.0"

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 :

6406531292690. ✔ Yes

6406531292691. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065356017

Question Shuffling Allowed : Yes

Question Number : 6 Question Id : 640653388967 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 correct progression of the industry?

Options :

6406531292700. ✖ Steam engine -> IT ->Assembly line ->IOT

6406531292701. ✖ Assembly line ->IT -> Steam engine ->IOT

6406531292702. ✖ Assembly line ->Steam engine -> IT ->IOT

6406531292703. ✔ Steam engine -> Assembly line ->IT ->IOT

Question Number : 7 Question Id : 640653388968 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 is the country of origin for Industry 4.0?

Options :

6406531292704. ✖ Japan

6406531292705. ✖ United States

6406531292706. ✖ Russia

6406531292707. ✔ United Kingdom

6406531292708. ✖ None of these

Question Number : 8 Question Id : 640653388969 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 Industry 4.0 version of transportation.

Options :

6406531292709. ✖ IC engine

6406531292710. ✖ Electric car

6406531292711. ✔ Hyperloop

6406531292712. ✖ Steam locomotive

Question Number : 9 Question Id : 640653388970 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

Location problem is not dependent on which of the following factors.

Options :

6406531292713. ✖ Distance

6406531292714. ✖ Number of facilities

6406531292715. ✖ Optimization criteria

6406531292716. ✔ None of these

Question Number : 10 Question Id : 640653388971 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 below formula represent the Euclidean metric distance?

Options :

6406531292717. ✔ $d_{ij} = \sqrt{(x_i - x_j)^2 + (y_i - y_j)^2}$

6406531292718. ✖ $d_{ij} = |(x_i - x_j)| + |(y_i - y_j)|$

6406531292719. ✖ $(x2 - x1) + (y2 - y1)$

6406531292720. ✖ All of these

Question Number : 11 Question Id : 640653388972 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 we choose the **Euclidean** distance measure, what will the optimal solution be?

Options :

6406531292721. ✔ Euclidean distance measure will result in a single point optimal solution

6406531292722. ✖ Metropolitan metric distance will result in a range for the optimal solution

6406531292723. ✖ Both Euclidean distance measure will result in a single point optimal solution & Metropolitan metric distance will result in a range for the optimal solution are wrong

6406531292724. ✖ Both Euclidean distance measure will result in a single point optimal solution & Metropolitan metric distance will result in a range for the optimal solution are correct

Question Number : 12 Question Id : 640653388973 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 we choose **Metropolitan distance** measure, how will the optimal solution be?

Options :

6406531292725. ✖ Euclidean distance measure will result in a single point optimal solution

6406531292726. ✔ Metropolitan metric distance will result in a range for the optimal solution

6406531292727. ✖ Both Euclidean distance measure will result in a single point optimal solution & Metropolitan metric distance will result in a range for the optimal solution are wrong

6406531292728. ✖ Both Euclidean distance measure will result in a single point optimal solution & Metropolitan metric distance will result in a range for the optimal solution are correct

Question Number : 13 Question Id : 640653388974 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

Cross-median approach says that the location should be located at the median with respect to:

Options :

6406531292729. ✔ Demand density

6406531292730. ✖ Energy density

6406531292731. ✖ Both Demand density & Energy density

6406531292732. ✖ None of these

Sub-Section Number :	3
Sub-Section Id :	64065356018
Question Shuffling Allowed :	No

Question Id : 640653388961 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 : (14 to 18)

Question Label : Comprehension

Currently, a company is using a layout which consists of 10 workstations. 200 cakes are baked in a day on this layout. A typical day consists of a single shift which runs for 8 hours. The cake baking process consists of 10 activities (the information is provided in the table below). Then answer the given subquestions

Activity ID	Activity Description	Activity Time (in seconds)	Preceding Activities
A	Prepare baking pans	20	
B	Make ingredients to room temperature	10	
C	Preheat Oven	60	
D	Stir ingredients together	40	A, B
E	Baking	20	C, D
F	Chocolate base pasting	5	E
G	Layer pasting	5	F, E
H	Icing	15	G
I	Cherry placing	5	H
J	Packing	5	I

Sub questions

Question Number : 14 Question Id : 640653388962 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 efficiency of the line where each activity is performed on a separate workstation (enter only the numerical value without the "%" symbol. Example: if the answer is 99.756%" enter only "99.76")?

NOTE: Enter your answer in two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

34.00 to 35.00

Question Number : 15 Question Id : 640653388963 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 maximum possible output that can be achieved?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

480

Question Number : 16 Question Id : 640653388964 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

Given the activity information, (theoretically) how many workstations can be reduced from the current line while achieving the maximum possible output?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 17 Question Id : 640653388965 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 layout is the best possible one to achieve the maximum possible output? (choose all that is applicable)

Options :

6406531292695. ✖ (A, B)→(C)→(D, E)→ (F, G, H, I)→(J)

6406531292696. ✖ (A)→(C)→(B, E, F)→ (D, G, H) → (I, J)

6406531292697. ✔ (A, B)→(C)→(D)→ (E, F, G, H, I, J)

6406531292698. ✖ (A, B)→(C)→(D, G)→ (E, F, H, I, J)

Question Number : 18 Question Id : 640653388966 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 efficiency of the best possible layout chosen in the previous question (entre only the numerical value up to two decimal places without the "%" symbol. Example: if the answer is 99.756%" entre only "99.76")?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

77.0 to 77.3

Sub-Section Number :	4
Sub-Section Id :	64065356019
Question Shuffling Allowed :	No

Question Id : 640653388975 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 : (19 to 22)

Question Label : Comprehension

Consider the following table, for the supplier selection problem. This table contains supplier attributes for 10 suppliers as explained in the tutorial. Answer the given subquestions

Supply network	Employee skills	Quality reputation	Price premium	Customers	Management
3	1	3	3	2	1
2	2	1	1	1	2
1	1	1	1	2	1
2	3	2	2	3	3
3	3	3	3	3	2
3	2	2	3	2	3
2	1	3	2	3	2
3	2	3	3	1	3
3	2	3	3	2	1
1	1	1	1	1	1

Sub questions

Question Number : 19 Question Id : 640653388976 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1.5

Question Label : Multiple Choice Question

How many itemsets are there with cardinality/number of elements equal to 3?

Options :

6406531292733. ✖ 3060

6406531292734. ✖ 8538

6406531292735. ✔ 816

6406531292736. ✖ 18

Question Number : 20 Question Id : 640653388977 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1.5

Question Label : Multiple Choice Question

How many itemsets have support value greater than or equal to 0.3?

Options :

6406531292737. ✔ 13

6406531292738. ✖ 9

6406531292739. ✖ 21

6406531292740. ✖ 7

Question Number : 21 Question Id : 640653388978 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 probability of observing {Price_Premium = 3, Quality_reputation =3}?

Options :

6406531292741. ✖ 0.33

6406531292742. ✖ 0.55

6406531292743. ✔ 0.4

6406531292744. ✖ 0.3

Question Number : 22 Question Id : 640653388979 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 association rules have minimum support of 0.4?

Options :

6406531292745. ✔ 12

6406531292746. ✖ 25

6406531292747. ✖ 38

6406531292748. ✖ 15

SPG

Section Id :	64065324015
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	33
Number of Questions to be attempted :	33
Section Marks :	50
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 :	64065356020
Question Shuffling Allowed :	No

Question Number : 23 Question Id : 640653388980 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 "DEGREE LEVEL : STRATEGIES FOR PROFESSIONAL GROWTH"

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 :

6406531292749. ✔ YES

6406531292750. ✖ NO

Sub-Section Number :	2

Sub-Section Id : 64065356021

Question Shuffling Allowed : No

Question Id : 640653388981 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 : (24 to 25)

Question Label : Comprehension

Read the case study, then answer the given subquestions that follow in about 200-300 words each.

CASE INCIDENT

Choosing Your Battles

There are situations in which too little conflict can be a problem. Some level of task conflict early in the process of formulating a solution can be an important stimulus to innovation. However, the conditions must be right for productive conflict. In particular, individuals must feel psychologically safe in bringing up issues for discussion. If people fear that what they say is going to be held against them, they may be reluctant to speak up or rock the boat. Experts suggest that effective conflicts have three key
characteristics: they should (1) speak to what is possible, (2) be compelling, and (3) involve uncertainty.

So how should you “pick a fight?” First, ensure that the stakes are sufficient to actually warrant a disruption. Second, focus on the future, and on how to resolve the conflict
rather than on whom to blame. Third, tie the conflict to fundamental values. Rather than concentrating on winning or losing, encourage both parties to see how successfully
exploring and resolving the conflict will lead to optimal outcomes for all. If managed successfully, some degree of open disagreement can be an important way for companies
to manage simmering and potentially destructive conflicts. Do these principles work in real organizations? The answer is yes.

Sub questions

Question Number : 24 Question Id : 640653388982 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 would you ensure sufficient discussion of contentious issues in a team? How can you bring unspoken conflicts into the open without making them worse?

Response Type : Alphanumeric

Evaluation Required For SA : No

Max Word Count : 300

Show Word Count : Yes

Min Word Count : 0

Highlight min word : Yes

Single Line Response : No

Number of Rows : 10

Number Of Columns : 70

Text Areas : PlainText

Question Number : 25 Question Id : 640653388983 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

Can you think of situations in your own life in which silence has worsened a conflict between parties? What might have been done differently to ensure that open communication facilitated collaboration instead?

Response Type : Alphanumeric

Evaluation Required For SA : No

Max Word Count : 300

Show Word Count : Yes

Min Word Count : 0

Highlight min word : Yes

Single Line Response : No

Number of Rows : 10

Number Of Columns : 70

Text Areas : PlainText

Question Id : 640653388984 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 : (26 to 27)

Question Label : Comprehension

Read the case study, then answer the given subquestions that follow in about 200-300 words each.

CASE INCIDENT

Doing My Own Thing

Rita Lowe has worked for the same boss for 11 years. Over coffee one day, her friend Sara asked her, “What is it like to work for old Charlie?” Rita replied, “Oh, I guess it’s okay. He pretty much leaves me alone. I more or less do my own thing.” Then Sara said, “Well, you’ve been at that same job for 11 years. How are you doing in it? Does it look like you will ever be promoted? If you don’t mind me saying so, I can’t for the life of me see that what you do has anything to do with the operation.” Rita replied, “Well, first of all, I really don’t have any idea of how I am doing. Charlie never tells me, but I’ve always taken the attitude that no news is good news. As for what I do and how it contributes to the operation around here, Charlie mumbled something when I started the job about being important to the operation, but that was it. We really don’t communicate very well.”

Sub questions

Question Number : 26 Question Id : 640653388985 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

Analyze Rita’s last statement: “We really don’t communicate very well.” What is the status of

communication in this professional relationship?

Response Type : Alphanumeric

Evaluation Required For SA : No

Max Word Count : 300

Show Word Count : Yes

Min Word Count : 0

Highlight min word : Yes

Single Line Response : No

Number of Rows : 10

Number Of Columns : 70

Text Areas : PlainText

Question Number : 27 Question Id : 640653388986 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

Give two examples of how the communication process can be improved and effective in this company. Discuss.

Response Type : Alphanumeric

Evaluation Required For SA : No

Max Word Count : 300

Show Word Count : Yes

Min Word Count : 0

Highlight min word : Yes

Single Line Response : No

Number of Rows : 10

Number Of Columns : 70

Text Areas : PlainText

Sub-Section Number : 3

Sub-Section Id : 64065356022

Question Shuffling Allowed : Yes

Question Number : 28 Question Id : 640653388988 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 October 2017, President Trump sought to deflect a news story reporting on links between his campaign and Russia by tweeting the following: “Who paid for it, Russia, the FBI or the Dems (or all)?” Trump attempted to diffuse the situation by:

Options :

6406531292759. ✖ twisting the semantics or meaning of the words.

6406531292760. ✖ attempting to create emotional disconnects.

6406531292761. ✖ raging about a different topic.

6406531292762. ✔ attempting to discredit the source.

Question Number : 29 Question Id : 640653388990 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

Select the statement that describes a growth mindset:

Options :

6406531292767. ✖ I can't improve

6406531292768. ✖ I don't want to make a mistakes

6406531292769. ✖ I am not good at this

6406531292770. ✔ I can't do this yet

Question Number : 30 Question Id : 640653388991 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 is a distinguishing feature of a team?

Options :

6406531292771. ✖ When team members exhibit individual skills, like when one is numbers-oriented and another is good at written communication.

6406531292772. ✔ Synergy, is the process of combining two or more actions that result in an effect that is much more than the total of the individual actions.

6406531292773. ✖ Information collection, necessary so that individuals can exchange the information they have with others so that everyone has what they need to do their jobs.

6406531292774. ✖ Individual goals, which must be assigned to keep individual players from social loading.

Question Number : 31 Question Id : 640653388992 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 issues must a manager/ leader address when considering the composition of the team?

Options :

6406531292775. ✖ The right design for the position of team members will hold.

6406531292776. ✔ Diversity of team members and inclusivity.

6406531292777. ✖ Leadership style and organizational structure.

6406531292778. ✖ A common purpose, specific goals, and team efficacy.

Question Number : 32 Question Id : 640653388993 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

As per Howard Gardner’s theory of multiple intelligences, intelligence includes:

Options :

6406531292779. ✖ A permanent change in behaviour as a result of experience.

6406531292780. ✔ A set of capabilities that allow an individual to learn.

6406531292781. ✖ The capacity of an individual to produce novel/ original answers to products

6406531292782. ✖ The ability to produce a single response to a specific question.

Question Number : 33 Question Id : 640653388994 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 pairs:

1. Naturalistic Intelligence: Ability to recognize and understand the various patterns in nature
2. Spatial Intelligence: Capacity to perceive, understand and use visual information effectively
3. Intrapersonal Intelligence: Ability to understand others and social interactions
4. Interpersonal Intelligence: Ability to understand oneself and know one's thoughts, emotions, feelings, motives and desires, and how these influence their behaviour.

Which of the pairs given above is/are correctly matched?

Options :

6406531292783. ✔ 1 and 2 only

6406531292784. ✖ 1, 2 and 3 only

6406531292785. ✖ 1, 3 and 4 only

6406531292786. ✖ 1, 2 and 4 only

Question Number : 34 Question Id : 640653388996 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

According to Nick Morgan, which of the following is/ are regarded as a “second conversation”?

Options :

6406531292791. ✔ Nonverbal communication

6406531292792. ✖ Inner chatter

6406531292793. ✖ Vertical communication

6406531292794. ✖ Personal communication

Question Number : 35 Question Id : 640653388997 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

Julian Treasure studies sound and advises businesses on how best to use it. He has given the acronym RASA, which is the Sanskrit word for "juice" or "essence." Which one
of the following expanded forms of the following acronyms is correct?

Options :

6406531292795. ✖ Read-Appreciate-Summarize-Appreciate

6406531292796. ✖ Receive-Acknowledge-Speak-Act

6406531292797. ✔ Receive-Appreciate-Summarize-Ask

6406531292798. ✖ Read-Acknowledge-Summarize-Appreciate

Question Number : 36 Question Id : 640653388998 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 people possessing a talent or innate intelligence mindset, what logical conclusion(s) can actually damage their success?

Options :

6406531292799. ✖ Innate intelligence is responsible for achievement, therefore study is unnecessary.

6406531292800. ✖ If they fail, they may not be as talented as people say.

6406531292801. ✖ Some people are meant to succeed and some are not.

6406531292802. ✔ All of these conclusions may damage the success of people with talent or innate mindsets

Question Number : 37 Question Id : 640653388999 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 individuals is not showing resilience?

Options :

6406531292803. ✖ Nurit's wedding cake was dropped just hours before her wedding. She calmly accepted an apology from the person who dropped the cake and made a few phone calls to local bakeries to get a decent replacement.

6406531292804. ✔ Doron returned from war and has constant thoughts of suicide. He stays indoors often and does not like to socialize with family or friends.

6406531292805. ✖ Avigali contracted a life-threatening illness that crippled her from the waist down. She doesn't let this stop her from competing in the Special Olympics in her wheelchair.

6406531292806. ✖ Nancy was born prematurely at only 2 pounds. She is placed in the Neonatal Intensive Care Unit in the hospital for several months and emerges from the hospital as a strong and healthy baby.

Question Number : 38 Question Id : 640653389000 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 pairs:

1. Inner communication: Unexpressed emotions, imagination

2. Non-verbal communication: Spoken word

3. Horizontal communication: Peers in the same team or across teams

4. Personal communication: Documents, Agreements, Reports, Emails, Messages

Which of the pairs given above is/are correctly matched?

Options :

6406531292807. ✔ 1 and 3 only

6406531292808. ✖ 1 and 4 only

6406531292809. ✖ 2, 3 and 4 only

6406531292810. ✖ 1, 2, 3 and 4

Question Number : 39 Question Id : 640653389001 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 statements best describes Kaizen?

Options :

6406531292811. ✖ It is a set of techniques and tools for process improvement.

6406531292812. ✖ It is a production method aimed primarily at reducing times within the production system as well as response times from suppliers and customers.

6406531292813. ✖ It refers to the set of cognitive, strategic and practical procedures used by designers in the process of designing.

6406531292814. ✔ It is a concept referring to business activities that continuously improve all functions and involve all employees from the CEO to the assembly line workers.

Question Number : 40 Question Id : 640653389002 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 Belbin Team Role?

Options :

6406531292815. ✖ Thinking roles

6406531292816. ✖ Action roles

6406531292817. ✔ Leadership roles

6406531292818. ✖ People roles

Question Number : 41 Question Id : 640653389003 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

Sensitivity to issues related to the meaning of life, death, and other aspects of human conditions refers to

Options :

6406531292819. ✖ Naturalistic intelligence

6406531292820. ✔ Existential intelligence

6406531292821. ✖ Bodily-kinesthetic intelligence

6406531292822. ✖ Interpersonal intelligence

Question Number : 42 Question Id : 640653389004 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

Hayat and Didem were key members of a project team headed by Murat. Hayat was technically competent and understood the project requirements very well, but lacked self-confidence. Didem, on the other hand, was very confident but lacked technical experience and expertise. As Murat was required to take over another project immediately, Hayat was selected as project leader, but Murat continued to devote 20% of his time to this project. After 6 to 7 weeks of taking charge, Hayat begins to feel that she requires some help with her leadership style as the project is getting

behind schedule. Murat decides to coach her using a collaborative style. Which of the following is the most appropriate approach?

Options :

6406531292823. ✖ On the basis of his observations, Murat diagnoses Hayat's problem of lack of assertiveness. He points out this problem and gives her some tips on how to enhance her assertiveness.

6406531292824. ✖ Murat shares the personal experience he had faced and solved such problems even when he was much younger and less experienced.

6406531292825. ✖ Murat points out that Hayat is ultimately responsible for ensuring project performance and outcomes, and so should come up with solutions rather than problems. He does this with the intention of putting pressure on Hayat to get over her timidity.

6406531292826. ✔ Murat sits together with Hayat to generate alternative solutions and encourages Hayat to consider the consequences of each of those alternatives.

Question Number : 43 Question Id : 640653389005 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

Shaifali, the manager of a bookstore, prefers to directly point out others' mistakes. Some employees see her communication style as aggressive. Which of the following can cause such a conflict?

Options :

6406531292827. ✖ Concern over job security

6406531292828. ✖ Lack of trust

6406531292829. ✔ Differences in work styles

6406531292830. ✖ Diversity in the workplace

Question Number : 44 Question Id : 640653389006 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

Trivikram and Abhinandan were in a conflict. Trivikram claimed he would give up part of his interests if Abhinandan gave up part of his. This is an example of what type of conflict management style?

Options :

6406531292831. ✖ Avoidance

6406531292832. ✔ Compromising

6406531292833. ✖ Collaborative

6406531292834. ✖ Competitive

Question Number : 45 Question Id : 640653389007 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

Asking "Could you give me an example of what you mean?" is an example of which of the following active listening skills?

Options :

6406531292835. ✔ Asking clarifying questions

6406531292836. ✖ Asking people to share their perceptions

6406531292837. ✖ Controlling emotions

6406531292838. ✖ Capturing non-verbal cues

Question Number : 46 Question Id : 640653389008 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

Emotional intelligence is characterised by

Options :

6406531292839. ✖ Proficient in problem-solving

6406531292840. ✔ Better interpersonal relationship

6406531292841. ✖ High abstract thinking ability

6406531292842. ✖ Good sense of humour

Question Number : 47 Question Id : 640653389009 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

Halime has worked very hard on developing an innovative new approach for carrying out a key project. This needs to be approved at a higher management level in the organization, but senior managers have so far given the idea no more than cursory attention. They have reluctantly agreed to Halime's request for a meeting to discuss this matter. But Halime has just found out that other agenda items have been subsequently included in that meeting, and so she is likely to get just 10 minutes to present her approach. She feels quite sure that senior managers don't feel inclined to change the existing methods, and are merely going through a ritual by making a short time allocation. She approaches you in an emotional and demoralized state. You have been her supervisor before. Though you work in a different part of the organization, she comes to you to be coached once in a while. What will you tell her?

Options :

6406531292843. ✖ You draw her out so that she can articulate her innovative idea in a clearer manner. Your purpose will be to ensure that she does not sound vague in her meeting and does not get misunderstood.

6406531292844. ✖ You agree with her that senior managers are indeed oriented to the status quo and that while she can make efforts, she should not expect results to necessarily flow from those efforts.

6406531292845. ✔ You help her see that she should perceive her role as that of an ace salesperson selling an idea to senior managers. You brainstorm with her some effective steps such

as to do that so that she approaches the meeting in a calm, confident, optimistic and determined state.

6406531292846. ✖ You point out that she may have already lost half the battle by getting demoralized. You point out to her that limiting beliefs and assumptions would be the wrong way of looking at the problem or challenge.

Question Number : 48 Question Id : 640653389010 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 behavioural patterns would not be a good idea for building good interpersonal relationships at the workplace?

Options :

6406531292847. ✖ When others have different views, ask questions about their data sources.

6406531292848. ✔ Make persistent and unyielding arguments.

6406531292849. ✖ Encourage others to explore any gaps in your reasoning.

6406531292850. ✖ Make your own reasoning explicit.

Question Number : 49 Question Id : 640653389013 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

Being aware of and learning to manage one's own emotional triggers is a way of practising

Options :

6406531292859. ✖ Self-awareness

6406531292860. ✖ Self-esteem

6406531292861. ✔ Self-regulation

6406531292862. ✖ Motivation

Question Number : 50 Question Id : 640653389014 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 elements that are outside your control and that may concern or affect or interest you indirectly, such as war, pandemic, and economy; fall under

Options :

6406531292863. ✖ Sphere of influence

6406531292864. ✖ Sphere of control

6406531292865. ✖ Sphere of unknown

6406531292866. ✔ Sphere of concern

Question Number : 51 Question Id : 640653389015 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 regarding Emotional Intelligence:

1. Its presence increases the possibility of success in professional life only.
2. It has no relation to morality.
3. Its aim is to ensure increased influence on individuals or groups.
4. It concentrates on emotional aspects like intuition, conscience, perception, intention etc.

Which of the above statements is/are not correct?

Options :

6406531292867. ✖ 1, 2 and 3 only

6406531292868. ✔ 1 and 2 only

6406531292869. ✖ 3 and 4 only

6406531292870. ✖ 1, 2 and 4 only

Sub-Section Number : 4

Sub-Section Id : 64065356023

Question Shuffling Allowed : Yes

Question Number : 52 Question Id : 640653388987 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 are not 'information overload' type barriers to communication?

Options :

6406531292755. ✖ The information received by a colleague at the workplace is very new.

6406531292756. ✖ The information sent to an employee is related to concepts that are not familiar to the employee.

6406531292757. ✔ If the information sender's positive characteristics affect the receiver's acceptance of a message.

6406531292758. ✔ If there is a strong likelihood that the intended receiver will misinterpret due to their emotional state.

Question Number : 53 Question Id : 640653388989 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

Studies show that family physicians that listen well produce better outcomes. Listening improves diagnoses, helps doctors see the context of psychological and social issues affecting patient health, and may even help avoid a lawsuit. What advice would you give about listening?

Options :

6406531292763. ✔ Paraphrase what the speaker is saying.

6406531292764. ✖ Ignore body language because it confuses the verbal message.

6406531292765. ✖ Prepare a response before the speaker has finished his remarks to appear

engaged.

6406531292766. ✔ Ask follow-up questions to confirm your understanding.

Question Number : 54 Question Id : 640653388995 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 correct about virtual teams?

Options :

6406531292787. ✔ The digital tools that help remote teams stay connected can lack the personalization of face-to-face interaction.

6406531292788. ✔ The phenomenon of 'social facilitation' is absent in virtual teams.

6406531292789. ✔ Spontaneous, informal communication—chatting over coffee or in a hallway—is absent and hence lacks team cohesion.

6406531292790. ✔ Nonverbal cues are missed when staffs work remotely.

Question Number : 55 Question Id : 640653389011 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

How can the principle of the beaver's way be applied in a working condition?

Options :

6406531292851. ✔ Controls your own destiny keenly.

6406531292852. ✔ Each employee to act as his or her own boss, reaching goals in ways best suited to his or her own personal style.

6406531292853. ✖ Wait for the instructions from the leader to know how far they can go.

6406531292854. ✖ Collecting seeds, which is worthy to be done!

Question Number : 56 Question Id : 640653389012 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

The Gung Ho! approach focuses on:

Options :

6406531292855. ✔ Sharing of information

6406531292856. ✔ Aligning purpose, values, and goals of people and organisation

6406531292857. ✖ Multi-level decision making

6406531292858. ✔ Celebration of successes

Question Number : 57 Question Id : 640653389016 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

Communication misunderstandings can happen due to:

Options :

6406531292871. ✔ Missing the details in the statement while communicating

6406531292872. ✔ Listening to or reading and understanding the statement incompletely

6406531292873. ✔ Verbiage

6406531292874. ✖ None of these

Sw Testing

Section Id :	64065324016
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory

Number of Questions :	16
Number of Questions to be attempted :	16
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 :	64065356024
Question Shuffling Allowed :	No

Question Number : 58 Question Id : 640653389017 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 "DEGREE LEVEL: SOFTWARE TESTING"

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 :

6406531292875. ✔ Yes

6406531292876. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065356025
Question Shuffling Allowed :	Yes

Question Number : 59 Question Id : 640653389032 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 represents the order in which artifacts are written in test driven development?

Options :

6406531292925. ✖ Code followed by test cases.

6406531292926. ✔ Test cases followed by code.

Question Number : 60 Question Id : 640653389038 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

Match the following *data flow criteria* with most appropriate *test requirements (TR)*.

data flow criteria	TR
1. *All-Defs Coverage*	A. Each def reaches all possible uses.
2. *All-Uses Coverage*	B. Each def reaches all possible uses through all possible du-paths.
3. *All-du-Path Coverage*	C. Each def reaches at least one use.

Options :

6406531292943. ✖ 1-B, 2-C, 3-A

6406531292944. ✔ 1-C, 2-A, 3-B

6406531292945. ✖ 1-C, 2-B, 3-A

6406531292946. ✖ 1-B, 2-A, 3-C

Sub-Section Number : 3

Sub-Section Id : 64065356026

Question Shuffling Allowed : Yes

Question Number : 61 Question Id : 640653389031 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

A test case is said to have passed when which of the following holds?

Options :

6406531292921. ✖ The actual output is different from expected output but there is no error

6406531292922. ✔ The actual output is the same as the expected output.

6406531292923. ✖ The software produces an output successfully upon giving an input.

6406531292924. ✖ There is a message that there is no error from the program

Sub-Section Number :	4
Sub-Section Id :	64065356027
Question Shuffling Allowed :	Yes

Question Number : 62 Question Id : 640653389028 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 represents the correct order of subsumption amongst data-flow coverage criteria in graphs? Read the symbol → below as “subsumes”.

Options :

6406531292909. ✖ All-defs-coverage → all-du-paths-coverage → all-uses-coverage

6406531292910. ✖ All-defs-coverage → all-uses-coverage → all-du-paths-coverage.

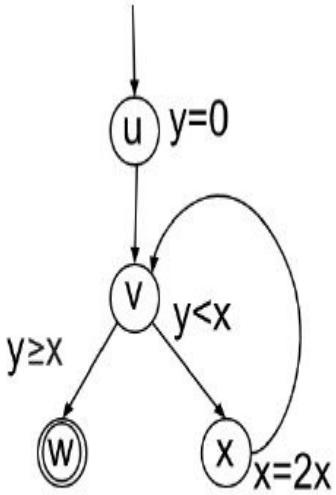
6406531292911. ✔ All-du-paths-coverage → all-uses-coverage → all-defs-coverage

6406531292912. ✖ All-du-paths-coverage → all-defs-coverage → all-uses-coverage

Question Number : 63 Question Id : 640653389033 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



The control flow graph given above represents which of the following codes? In the graph above `u` is the initial node and `x` is the final node.

Options :

6406531292927. ✖

```
y=0;
if(y>=x)
{
  x=2*x
}
```

6406531292928. ✖

```
if (y=0)
{
  while(y>=x)
  {
    x=2*x;
  }
}
```

6406531292929. ✔

```
y=0;
while(y<x)
{
  x=2*x;
}
```

6406531292930. ✖

```
if (y=0)
{
  while(y<x)
  {
    x=2*x
  }
}
```

Sub-Section Number : 5

Sub-Section Id : 64065356028

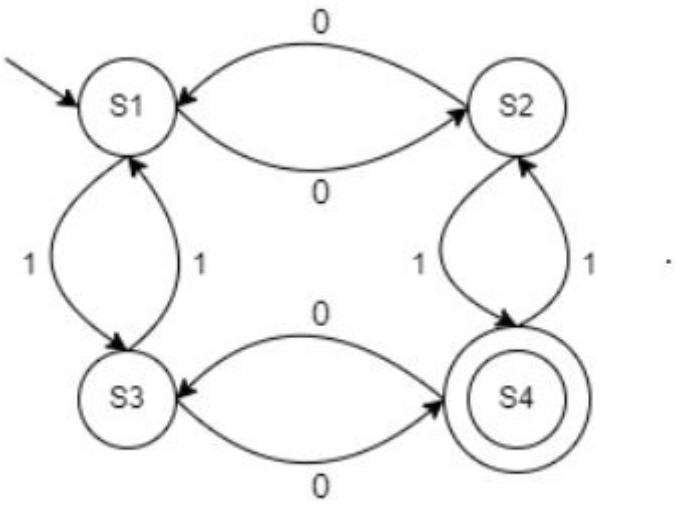
Question Shuffling Allowed : Yes

Question Number : 64 Question Id : 640653389019 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

Consider the FSM given below.



Which of the following is true about the above FSM.

Options :

6406531292881. ✖ It accepts all the binary strings that have an odd number of 0s.

6406531292882. ✖ It accepts all the binary strings that have an odd number of 1s.

6406531292883. ✔ It accepts all the binary strings that have an odd number of 0s and an odd number of 1s.

6406531292884. ✖ It accepts all the binary strings that have an even number of 0s and an even number of 1s.

Sub-Section Number : 6

Sub-Section Id : 64065356029

Question Shuffling Allowed : Yes

Question Number : 65 Question Id : 640653389020 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 8

Question Label : Multiple Choice Question

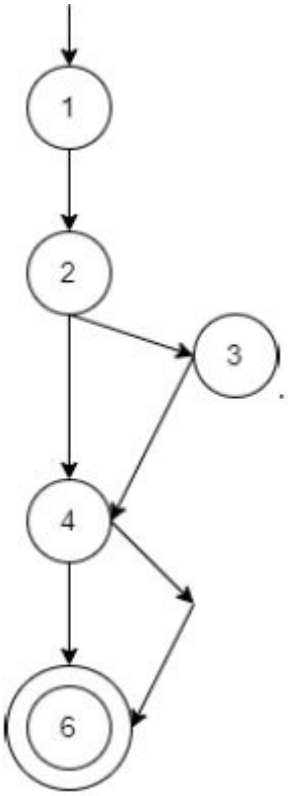
Consider the Java code given below.

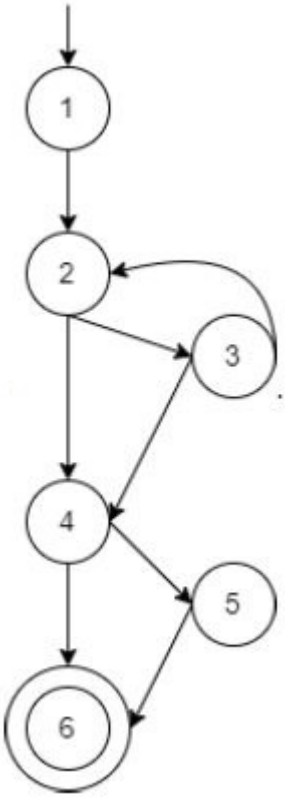
```
1  public class LinearSearch {
2    private int[] iArr;
3    public LinearSearch(int[] arr) {
4      iArr = arr;
5    }
6    public int search(int key) {
7      int i = 0;
8      for(; i < iArr.length; i++) {
9        if(iArr[i] == key)
10         break;
11     }
12     if(i >= iArr.length)
13       i = -1;              //return -1 if key not found
14     return i;               //return index of key element if key found
15   }
16 }
```

Identify the correct CFG for the method `search()`.

Options :

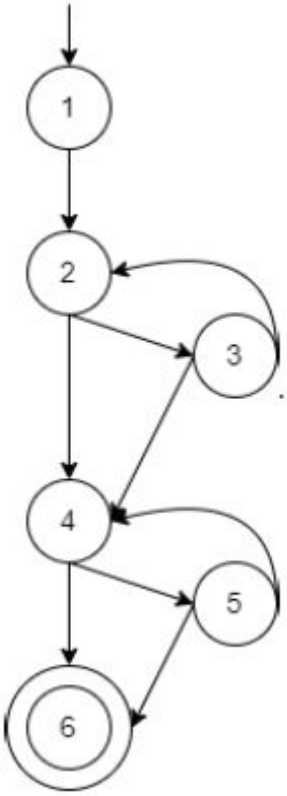
6406531292885. ✖

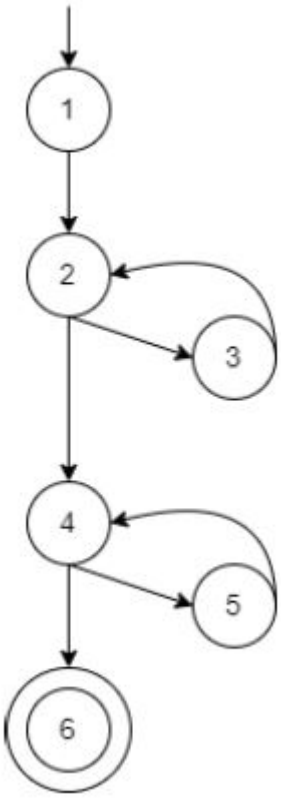




6406531292886. ✔

6406531292887. ✖





6406531292888. ✖

Sub-Section Number : 7

Sub-Section Id : 64065356030

Question Shuffling Allowed : Yes

Question Number : 66 Question Id : 640653389030 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

For a tester to observe an error or a fault in a particular location of a program, which of the following should be true together?

Options :

6406531292917. ✔ The location of the program should be reachable by the test case given by the tester.

6406531292918. ✔ The state of the program must be incorrect at that location of the program.

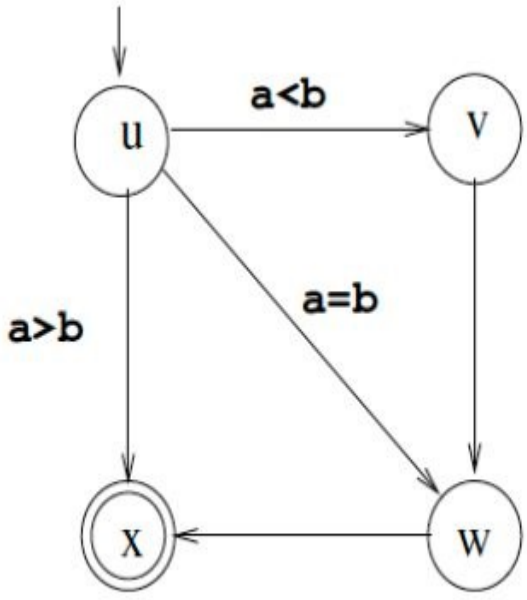
6406531292919. ✔ The final state of the program should be incorrect.

6406531292920. ✖ The tester should see the error in the program.

Question Number : 67 Question Id : 640653389034 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



Which of the following test case inputs will result in a test path that visits the edge `(v,w)`?

Options :

6406531292931. ✔ a=5, b=7

6406531292932. ✖ a=5, b=5

6406531292933. ✖ a=8, b=7

6406531292934. ✔ a=0, b=1

Sub-Section Number : 8

Sub-Section Id : 64065356031

Question Shuffling Allowed : Yes

Question Number : 68 Question Id : 640653389018 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 following classes for the code base to be tested, and a test class.

```java
//code base
public class StringProcessor {
  String word;
  public StringProcessor (String w) {
    word = w;
  }
  public String revStr() {
    String rstr = "";
    for(int i = 0; i < word.length(); i++)
      rstr = word.charAt(i) + rstr;
    return rstr;
  }
}


//test class
import static org.junit.Assert.*;
import org.junit.Test;

public class TestStringProcessor {
  @Test
  public void testCase1() {
    StringProcessor sp = new StringProcessor("test");
    assertEquals("tset", sp.revStr());
  }
  @Test
  public void testCase2() {
    StringProcessor sp = new StringProcessor("test");
    assertNull(sp.revStr());
  }
  @Test
  public void testCase3() {
    StringProcessor sp = new StringProcessor("test");
    assertFalse(sp.revStr().equals("tset"));
  }
  @Test
  public void testCase4() {
    StringProcessor sp = new StringProcessor("test");
    assertNotNull(sp.revStr());
  }
}

```

Identify the test case method(s) that fail(s) on the code base.

Options :

6406531292877. ✖

```
testCase1()
```

6406531292878. ✔

```
testCase2()
```

6406531292879. ✔

```
1 testCase3()
```

6406531292880. ✖

```
1 testCase4()
```

Question Number : 69 Question Id : 640653389029 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 that a coverage criteria C_1 subsumes coverage criteria C_2. Also that there exists a test set T_1 that satisfies C_1 on some code base B and another test set T_2 that satisfies C_2 on the same code base B.
Select the statements that are correct for the above scenario.

Options :

6406531292913. ✖ T_1 will necessarily satisfy C_2.

6406531292914. ✔ T_2 wil necessarily satisfy C_1.

6406531292915. ✖ If T_2 exposes some fault in B implies that T_1 will also be able to expose the same fault.

6406531292916. ✖ None of these

Sub-Section Number :	9
Sub-Section Id :	64065356032
Question Shuffling Allowed :	Yes

Question Number : 70 Question Id : 640653389039 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 CFG with single component that has 6 nodes and 7 edges. What is the cyclomatic complexity of the given CFG? Do not write the number in words, if your answer is 6, enter 6 but **not** six.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

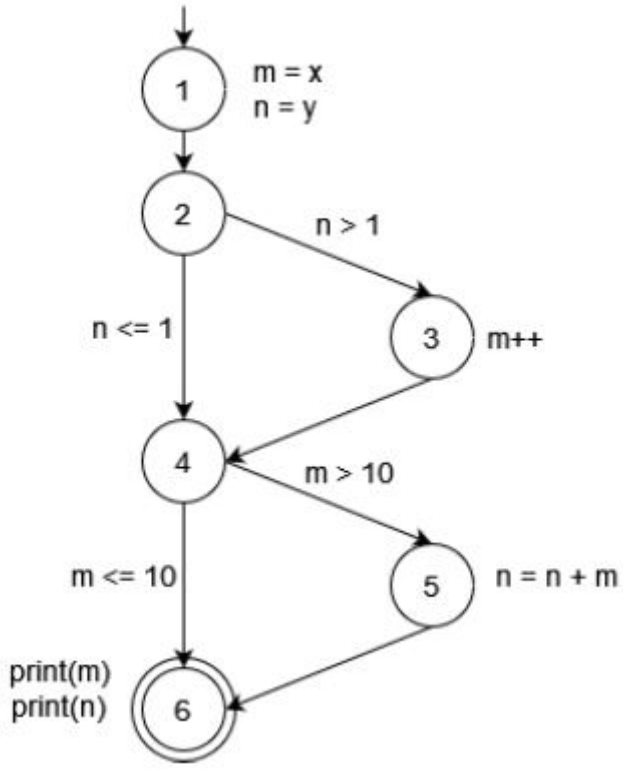
Sub-Section Number :	10
Sub-Section Id :	64065356033
Question Shuffling Allowed :	No

Question Id : 640653389025 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 : (71 to 72)

Question Label : Comprehension

Consider the annotated CFG (for dataflow coverage) given below and answer the given subquestions.



Sub questions

Question Number : 71 Question Id : 640653389026 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

How many *du-pairs* are there for the variable *n*?

Options :

6406531292901. ✔ 6

6406531292902. ✖ 7

6406531292903. ✖ 8

6406531292904. ✖ 9

Question Number : 72 Question Id : 640653389027 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

How many unique *du-paths* are there for the variable *n*?

Options :

6406531292905. ✖ 5

6406531292906. ✔ 6

6406531292907. ✖ 7

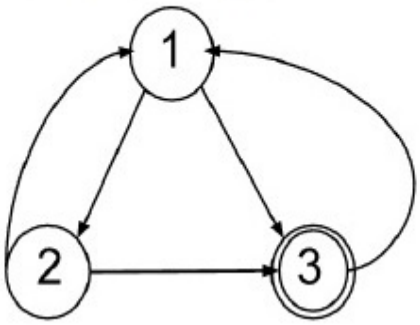
6406531292908. ✖ 8

Question Id : 640653389035 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 : (73 to 74)

Question Label : Comprehension

Answer the given subquestions based on the given graph. In this node `1` is the initial node and node `3` is the final node.



Sub questions

Question Number : 73 Question Id : 640653389036 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

Which of the following paths are test paths?

Options :

6406531292935. ✖ $[1, 2, 3, 1]$

6406531292936. ✔ $[1, 2, 3, 1, 2, 1, 3]$

6406531292937. ✔ $[1, 3, 1, 2, 3]$

6406531292938. ✖ $[1, 2, 3, 2, 3]$

Question Number : 74 Question Id : 640653389037 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

Consider the prime path $[3, 1, 3]$ and a path $P = [1, 2, 3, 1, 2, 1, 3]$. Which of the following statements for path P are true?

Options :

6406531292939. ✖ P directly tours the prime path.

6406531292940. ✔ P tours the prime path with the sidetrip $[1, 2, 1]$.

6406531292941. ✖ P tours the prime path with the sidetrip $[2, 1, 2]$.

6406531292942. ✖ P does not tours the prime path in any case.

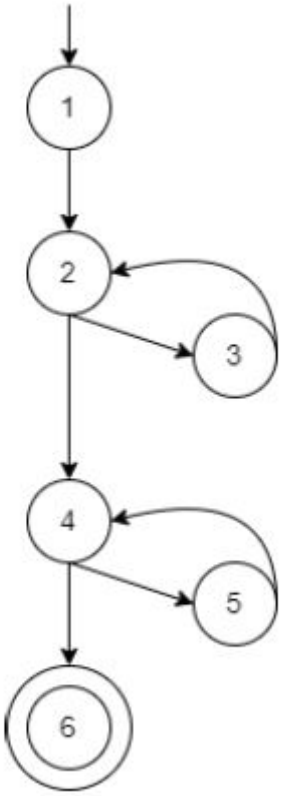
Sub-Section Number :	11
Sub-Section Id :	64065356034
Question Shuffling Allowed :	No

Question Id : 640653389021 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 : (75 to 77)

Question Label : Comprehension

Consider the CFG given below and answer the given subquestions.



Sub questions

Question Number : 75 Question Id : 640653389022 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

How many test requirements are there for *edge-pair coverage?*

Options :

6406531292889. ✔ 10

6406531292890. ✖ 11

6406531292891. ✖ 12

6406531292892. ✖ 13

Question Number : 76 Question Id : 640653389023 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

How many simple paths are present in the given CFG?

Options :

6406531292893. ✖ 25

6406531292894. ✔ 27

6406531292895. ✖ 29

6406531292896. ✖ 31

Question Number : 77 Question Id : 640653389024 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

How many test requirements are there for *prime path coverage?*

Options :

6406531292897. ✖ 8

6406531292898. ✖ 9

6406531292899. ✔ 10

6406531292900. ✖ 11

Sw Engg

Section Id :	64065324017
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	1
Number of Questions to be attempted :	1
Section Marks :	0

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 :	64065356035
Question Shuffling Allowed :	No

Question Number : 78 Question Id : 640653389040 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 : No Quiz1 for Software Engineering

Options :

6406531292948. ✔ YES

6406531292949. ✖ NO

AI

Section Id :	64065324018
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	5
Number of Questions to be attempted :	5
Section Marks :	25
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 :	64065356036
Question Shuffling Allowed :	No

Question Number : 79 Question Id : 640653389041 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 "DEGREE LEVEL : AI: SEARCH METHODS FOR PROBLEM SOLVING"

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 :

6406531292950. ✔ YES

6406531292951. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	64065356037
Question Shuffling Allowed :	No

Question Id : 640653389042 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 : (80 to 81)

Question Label : Comprehension

STATE SPACE

In the 8-puzzle, use the combination of tile-number (1 to 8) and the direction (Up, Down,Left,

Right) of tile movement to denote a move, for example:

6U — move tile 6 up

2D — move tile 2 down

4L — move tile 4 left

8R — move tile 8 right

Based on the above data, answer the given subquestions.

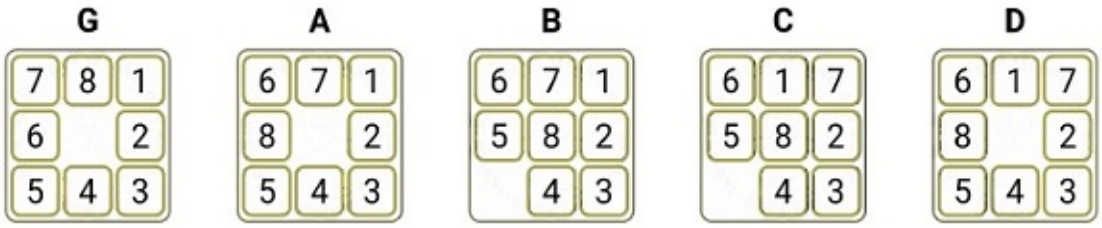
Sub questions

Question Number : 80 Question Id : 640653389043 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

Starting from board G, the sequence of moves 8D,7R,6U,5U will result in _____ .



Options :

6406531292952. ✖ Board G

6406531292953. ✖ Board A

6406531292954. ✔ Board B

6406531292955. ✖ Board C

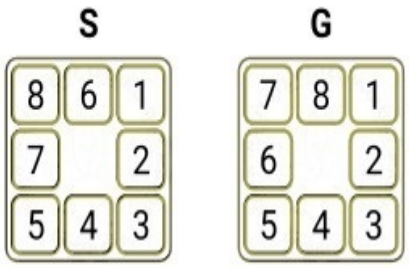
6406531292956. ✖ Board D

Question Number : 81 Question Id : 640653389044 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

Starting from board S, what is the shortest sequence of moves that will result in board G?



Enter a comma separated list of moves.
NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.
Answer Format: 3U,1D,4R

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

6D,8R,7U,6L

Sub-Section Number :	3
Sub-Section Id :	64065356038
Question Shuffling Allowed :	No

Question Id : 640653389045 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 : (82 to 90)

Question Label : Comprehension

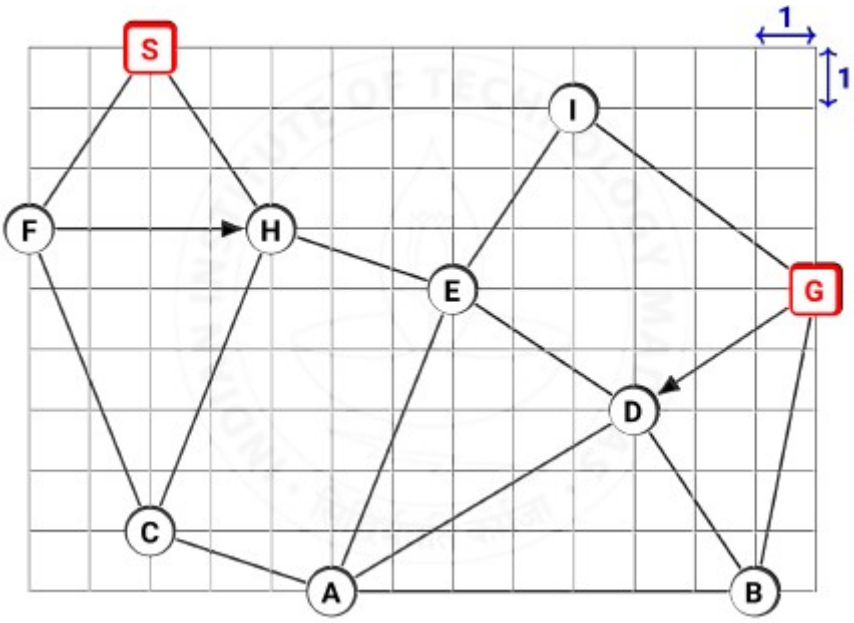
SEARCH

The figure shows a map with several locations on a grid where each tile is 1x1 in size. The locations are at grid points and are connected by either two-way edges (shown as undirected edges) or one-

way edges (shown with one arrowhead).

Take S as the start node and G as the goal node. The MoveGen function returns neighbours in alphabetical order. The RemoveSeen procedure removes neighbours already present in OPEN/CLOSED lists.

Use Manhattan distance when needed



When we say a node is inspected/expanded/refined it means: the node is picked up from OPEN, and goal test is called, if goal test fails then MoveGen is called and, depending on the algorithm, the neighbours are selectively placed in OPEN.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 82 Question Id : 640653389046 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

List the first 4 nodes inspected by Depth First Search. List the nodes in the order they were inspected. If the algorithm terminates early then list the nodes inspected up until termination.

Enter a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,F,C,A

Question Number : 83 Question Id : 640653389047 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 path found by Depth First Search?

Enter the path as a comma separated list of node labels.

Enter NIL if there is no path.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z,G

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,F,C,A,B,G

Question Number : 84 Question Id : 640653389048 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

List the first 4 nodes inspected by Breadth First Search. List the nodes in the order they were inspected. If the algorithm terminates early then list the nodes inspected up until termination.

Enter a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,F,H,C

Question Number : 85 Question Id : 640653389049 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 path found by Breadth First Search?

Enter the path as a comma separated list of node labels.

Enter NIL if there is no path.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z,G

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,H,E,I,G

Question Number : 86 Question Id : 640653389050 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

List the first 4 nodes inspected by Best First Search. List the nodes in the order they were inspected. If the algorithm terminates early then list the nodes inspected up until termination.

Enter a comma separated list of node labels.
NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,H,E,D

Question Number : 87 Question Id : 640653389051 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 path found by Best First Search?

Enter the path as a comma separated list of node labels.

Enter NIL if there is no path.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z,G

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,H,E,D,B,G

Question Number : 88 Question Id : 640653389052 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

List the first 4 nodes inspected by Hill Climbing. List the nodes in the order they were inspected. If the algorithm terminates early then list the nodes inspected up until termination.

Enter a comma separated list of node labels.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

S,H,E,D

Question Number : 89 Question Id : 640653389053 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 path found by Hill Climbing?

Enter the path as a comma separated list of node labels.

Enter NIL if there is no path.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer Format: S,X,Y,Z,G

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

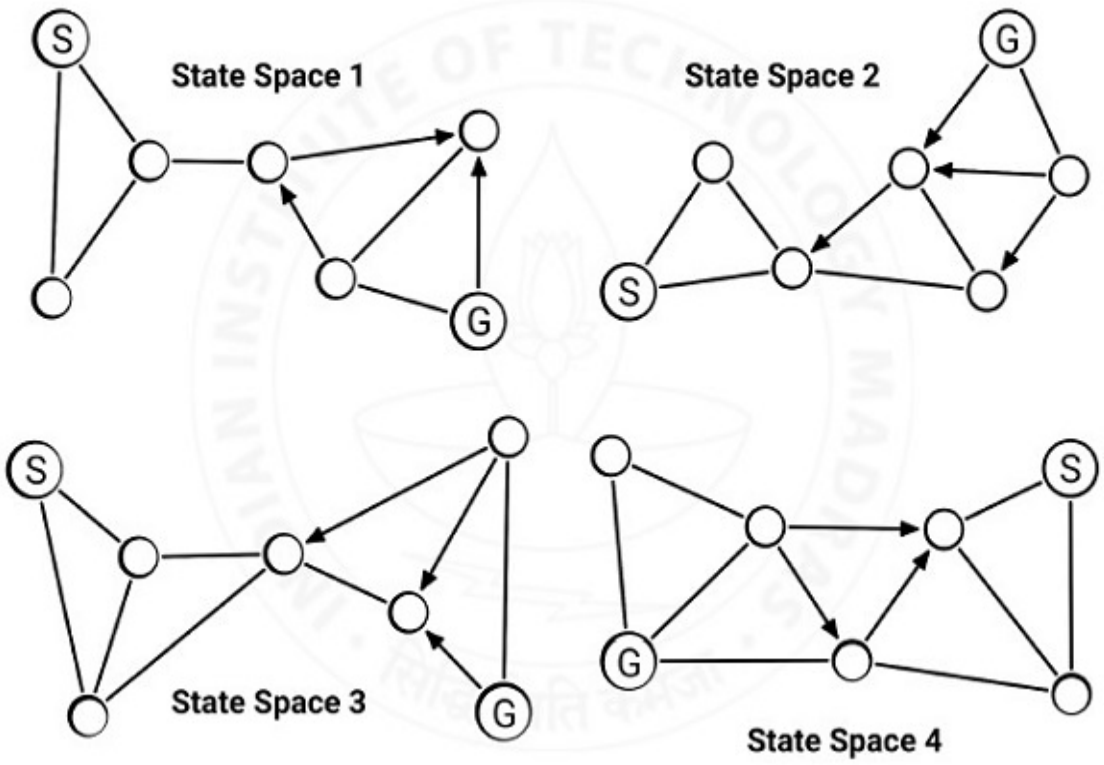
Nil

Question Number : 90 Question Id : 640653389054 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

For which of these state spaces does Depth First Search find a path from S to G?



Options :

6406531292966. ✔ State Space 1

6406531292967. ✖ State Space 2

6406531292968. ✖ State Space 3

6406531292969. ✔ State Space 4

Sub-Section Number :	4
Sub-Section Id :	64065356039
Question Shuffling Allowed :	No

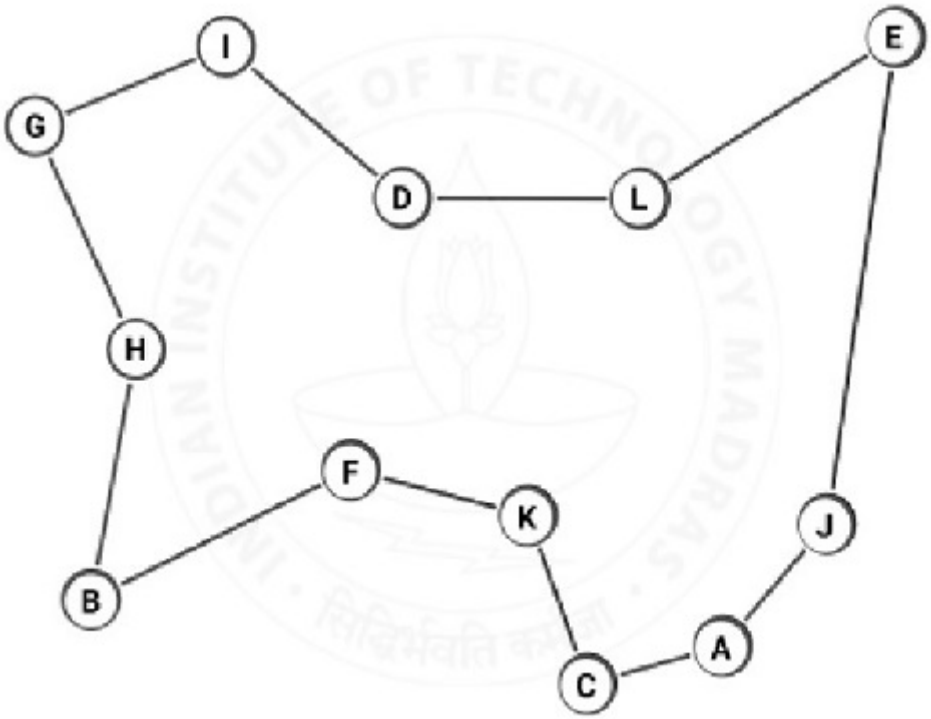
Question Id : 640653389055 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (91 to 94)

Question Label : Comprehension

GENETIC ALGORITHM

A tour of 12 cities is shown below. The edges are bi-directional. Use A,B,C,...,L as the reference (index) sequence to prepare tour representations.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 91 Question Id : 640653389056 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

Select the valid path representations of the tour.

Options :

6406531292970. ✔ I,D,L,E,J,A,C,K,F,B,H,G

6406531292971. ✔ A,J,E,L,D,I,G,H,B,F,K,C

6406531292972. ✖ A,C,K,L,G,J,F,H,I,D,E,B

6406531292973. ✖ A,C,K,H,J,F,G,I,D,L,E,B

Question Number : 92 Question Id : 640653389057 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

Select the valid adjacency representations of the tour.

Options :

6406531292974. ✔ C,H,K,L,J,B,I,G,D,A,F,E

6406531292975. ✔ J,F,A,I,L,K,H,B,G,E,C,D

6406531292976. ✖ I,D,L,E,J,A,C,K,F,B,H,G

6406531292977. ✖ A,J,E,L,D,I,G,H,B,F,K,C

Question Number : 93 Question Id : 640653389058 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

Convert the path representation A,C,K,F,B,H,G,I,D,L,E,J to ordinal representation.

Options :

6406531292978. ✔ 1,2,9,4,1,4,3,3,1,3,1,1

6406531292979. ✖ 9,4,10,4,2,1,1,5,3,3,1,1

6406531292980. ✖ 1,2,9,4,1,3,3,4,1,3,1,1

6406531292981. ✖ 3,10,8,3,2,2,5,1,3,3,2,1

Question Number : 94 Question Id : 640653389059 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

Path representations of two tours are given below. Generate offspring using Cycle Crossover.

P1: I,D,L,E,J,A,C,K,F,B,H,G

P2: C,K,I,D,B,E,J,A,H,L,G,F

Select the child tours.

Options :

6406531292982. ✔ I,K,L,D,J,E,C,A,F,B,H,G

6406531292983. ✔ C,D,I,E,B,A,J,K,H,L,G,F

6406531292984. ✖ I,D,L,K,B,A,E,H,C,J,F,G

6406531292985. ✖ A,L,I,E,J,D,C,K,H,F,G,B

Sub-Section Number : 5

Sub-Section Id : 64065356040

Question Shuffling Allowed : No

Question Id : 640653389060 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 : (95 to 99)

Question Label : Comprehension

TSP

The distance matrix for 7 cities and the corresponding edge costs (in sorted order) are provided below. Use this information to construct TSP tours.

	A	B	C	D	E	F	G
A	-	106	23	91	103	69	143
B	106	-	84	84	163	48	77
C	23	84	-	85	117	53	130
D	91	84	85	-	87	45	63
E	103	163	117	87	-	115	145
F	69	48	53	45	115	-	77
G	143	77	130	63	145	77	-

AC	DF	BF	CF	DG	AF	BG
23	45	48	53	63	69	77

FG	BC	BD	CD	DE	AD	AE
77	84	84	85	87	91	103

AB	EF	CE	CG	AG	EG	BE
106	115	117	130	143	145	163

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 95 Question Id : 640653389061 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

Use E as the starting city, construct a tour using Nearest Neighbour Heuristic. The tour is _____ . Enter the path representation of the tour, starting from E and tracing the cities selected by the Nearest Neighbour Heuristic.

Enter a comma separated list of city names.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer format: E,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

E,D,F,B,G,C,A

Question Number : 96 Question Id : 640653389062 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 cost of the tour generated by Nearest Neighbour Heuristic?

Enter a number.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer format: 17

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

513

Question Number : 97 Question Id : 640653389063 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 tour using Greedy Heuristic, enter the path representation of the tour starting from city A.

Enter a comma separated list of city names.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer format: A,X,Y,Z

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

A,C,G,D,F,B,E

A,E,B,F,D,G,C

Question Number : 98 Question Id : 640653389064 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 cost of the tour generated by Greedy Heuristic?

Enter a number.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer format: 17

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

575

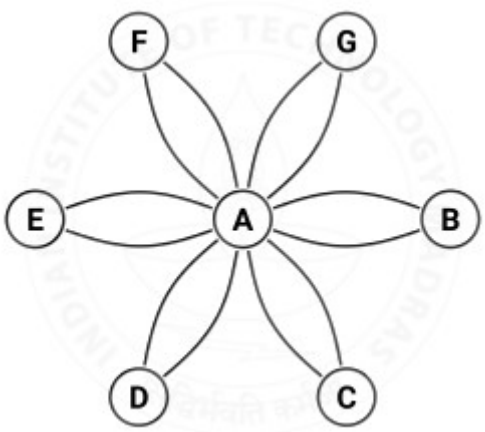
Question Number : 99 Question Id : 640653389065 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

Savings heuristic: the initial set of 6 tours with A as the fulcrum node is shown in the figure. Identify the first two edges that will be removed and the first new edge that will be added, and compute the savings. Enter the first edge added and the savings in the text box.



An edge from X to Y is named as XY.

Enter an edge name XY and a number as a comma separated list.

NO SPACES, TABS, DOTS, BRACKETS, PARENTHESIS OR UNWANTED CHARACTERS.

Answer format: XY,17

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

BG,172

GB,172

Deep Learning

Section Id :	64065324019
Section Number :	7
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	7
Number of Questions to be attempted :	7
Section Marks :	50
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 :	64065356041
Question Shuffling Allowed :	No

Question Number : 100 Question Id : 640653389066 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 " DEGREE LEVEL : DEEP LEARNING "

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 :

6406531292991. ✔ YES

6406531292992. ✖ NO

Sub-Section Number : 2

Sub-Section Id : 64065356042

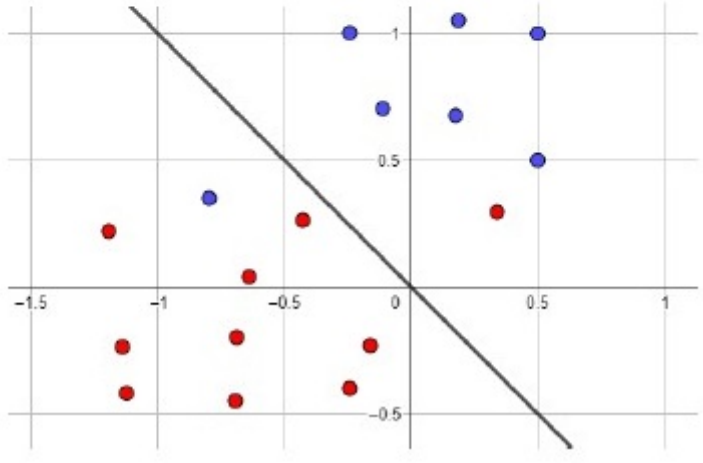
Question Shuffling Allowed : Yes

Question Number : 101 Question Id : 640653389071 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 the diagram shown below, the blue data points belong to the positive class ($\mathbf{w}^T\mathbf{x} \geq 0$) and the red data points belong to the negative class ($\mathbf{w}^T\mathbf{x} < 0$). The number of data points that are misclassified according to the decision line, represented by the weight vector $\begin{bmatrix} 0.5 \\ 0.5 \end{bmatrix}$, shown in the figure is?



Options :

6406531293006. ✖ 15

6406531293007. ✖ 10

6406531293008. ✔ 2

6406531293009. ✖ Insufficient information

Question Number : 102 Question Id : 640653389084 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 team has a dataset that contains 100000 samples for training a feed forward neural network. Suppose they decided to use the mini-batch gradient descent algorithm to update the weights. How many times do the weights get updated after training the network for 10 epochs with a mini-batch size of 1000?

Options :

6406531293042. ✖ 100

6406531293043. ✔ 1000

6406531293044. ✖ 100000

6406531293045. ✖ 10

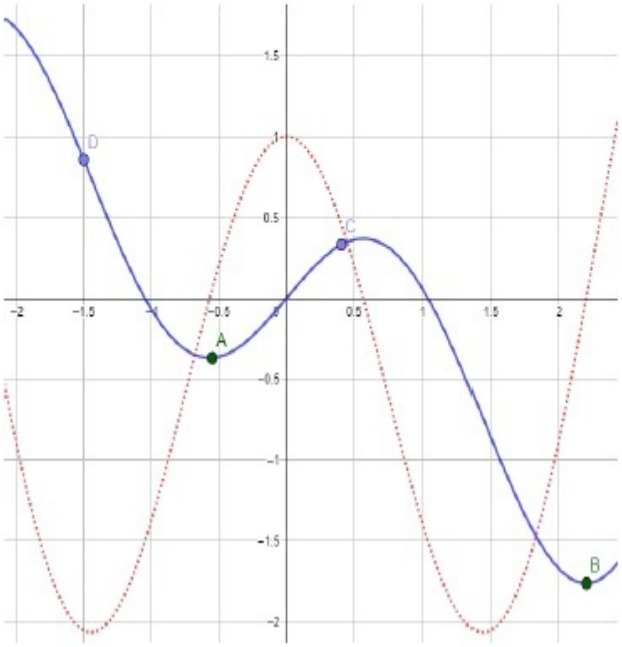
Sub-Section Number :	3
Sub-Section Id :	64065356043
Question Shuffling Allowed :	Yes

Question Number : 103 Question Id : 640653389083 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 functions $f(w)$ (Solid blue line) and its derivative $\frac{\partial f}{\partial w}$ (Dotted red line) as shown in Figure below. The function contains two minima at A and B. Suppose that gradient descent (GD) algorithm is used to update the parameter. Assume that the learning rate $\eta = 1$. Which of the following statement(s) is(are) true?



Options :

6406531293038. ✔ The updated weight,after one iteration, moves past the minimum at *A* if the weight is initialized at point *D*

6406531293039. ✖ The updated weight,after one iteration, moves past the minimum at *A* if the weight is initialized at point *C*

6406531293040. ✔ The updated weight,after one iteration, moves towards the minimum at *A* if the weight is initialized at point *C*

6406531293041. ✖ The updated weight,after one iteration, moves away from the minimum at *B* if the weight is initialized at point *D*

Sub-Section Number : 4

Sub-Section Id : 64065356044

Question Shuffling Allowed : No

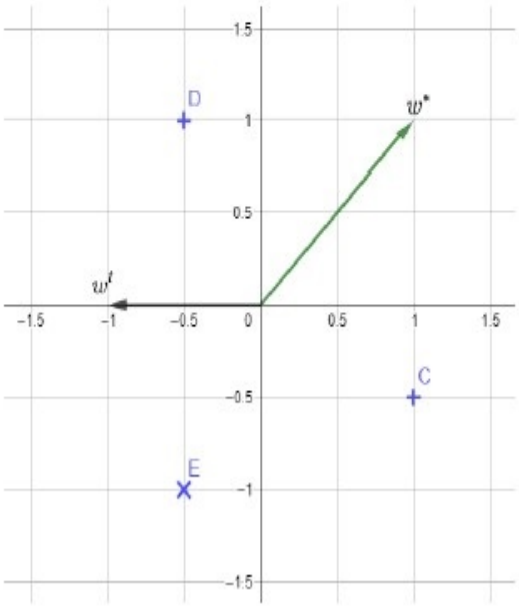
Question Id : 640653389072 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (104 to 107)

Question Label : Comprehension

Consider the diagram shown below. The data points C and D belong to the positive (1) class **P** and the data point E belongs to the negative(0) class **N**. Assume that we use the perceptron to classify the data points with the following rule

$$\hat{y} = \begin{cases} 1, & \text{if } \mathrm{w}^T x \geq 0 \\ 0, & \text{otherwise} \end{cases}$$



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 104 Question Id : 640653389073 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

Are the data points linearly separable?

Options :

6406531293010. ✔ Yes

6406531293011. ✖ No

Question Number : 105 Question Id : 640653389074 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

Suppose that we initialize the weights *w* of perceptron randomly and run the perceptron learning algorithm for *t* iterations. For each iteration, it considers one data point and updates the weights, if required. The weight after *t* iterations is shown as w^t in the figure. The algorithm now starts iterating over the data points in the following order:(D,E,C). What will be the value of w^t after one more iteration, *i.e.*, what will be the value of w^{t+1}?

Options :

6406531293012. ✔ $w^{t+1} = [-1, 0]^T$

6406531293013. ✖ $w^{t+1} = [-1.5, 1]^T$

6406531293014. ✖ $w^{t+1} = [0.5, 1]^T$

6406531293015. ✖ $w^{t+1} = [-0.5, 1]^T$

Question Number : 106 Question Id : 640653389075 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 value of w^t after two more iteration, *i.e.*, what will be the value of w^{t+2}?

Options :

6406531293016. ✖ $w^{t+2} = [0.5, 1]^T$

6406531293017. ✖ $w^{t+2} = [0.5, 0.5]^T$

6406531293018. ✖ $w^{t+2} = [-1, 0]^T$

6406531293019. ✔ $w^{t+2} = [-0.5, 1]^T$

Question Number : 107 Question Id : 640653389076 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 angle between w^{t+3} and w^*?

Options :

6406531293020. ✔ 0

6406531293021. ✖ $\frac{\pi}{2}$

6406531293022. ✖ π

6406531293023. ✖ $\frac{\pi}{4}$

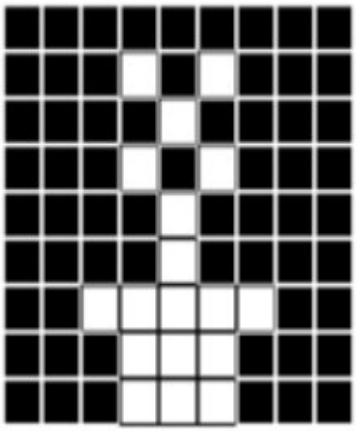
Sub-Section Number :	5
Sub-Section Id :	64065356045
Question Shuffling Allowed :	No

Question Id : 640653389067 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

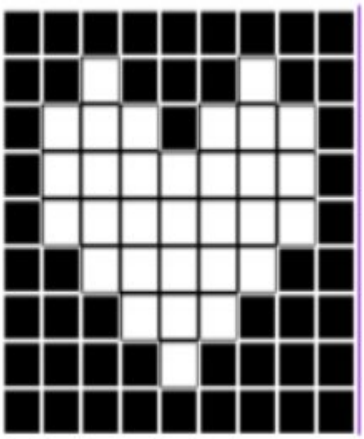
Question Numbers : (108 to 110)

Question Label : Comprehension

The binary images shown below are of size 9×9. Black represents 0 and white represents 1. The object is represented by (a group of) white squares



Class: 0



Class: 1

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 108 Question Id : 640653389068 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

Suppose that the inputs are generated by shifting the object in the image by maintaining the relative positions of the white squares (note that even after shifting the entire object will still remain in the image). Suppose further that we use the McCulloch- Pitts neuron to recognize the images. Recognizing here means that the neuron outputs 0 if the input image is from class 0, and it outputs 1 for the images from class 1. The image is resized as a vector by concatenating rows. Therefore, the input $x \in \mathbb{R}^{81}$. Which of the following thresholds (θ) achieves this task with zero classification error?

$$\hat{y} = \begin{cases} 1, & \text{if } \sum_{i=1}^{81} x_i > \theta \\ 0, & \text{otherwise} \end{cases}$$

where, $\hat{y}$ is the output from the MP neuron.

Options :

6406531292993. ✔ $\theta = 25$

6406531292994. ✖ $\theta = 81$

6406531292995. ✖ $\theta = 31$

6406531292996. ✔ $18 \leq \theta < 31$

6406531292997. ✖ $18 \leq \theta \leq 31$

6406531292998. ✖

Shifting the object in an image might influence the final θ value. Therefore, not possible to fix a threshold value which will lead to zero classification error.

Question Number : 109 Question Id : 640653389069 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 vector form of the image is a data point $\in \mathbb{R}^{81}$. Therefore, all the inputs that are generated by shifting the object in the image, by maintaining the relative positions of the white squares, are also data points $\in \mathbb{R}^{81}$. Some of those data points will belong to class 0 and some belongs to class 1. Then, the statement that the data points are not linearly separable is

Options :

6406531292999. ✖ TRUE

6406531293000. ✔ FALSE

6406531293001. ✖ Not possible to decide

Question Number : 110 Question Id : 640653389070 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 two images shown above are just two possible configurations of input $x \in \mathbb{R}^{81}$. Two more possible configurations are an input image of the same size, either full of black squares or full of white squares. How many such configurations are possible?

Options :

6406531293002. ✔ 2^{81}

6406531293003. ✖ $2^{2^{81}}$

6406531293004. ✖ 2

6406531293005. ✖ 2^2

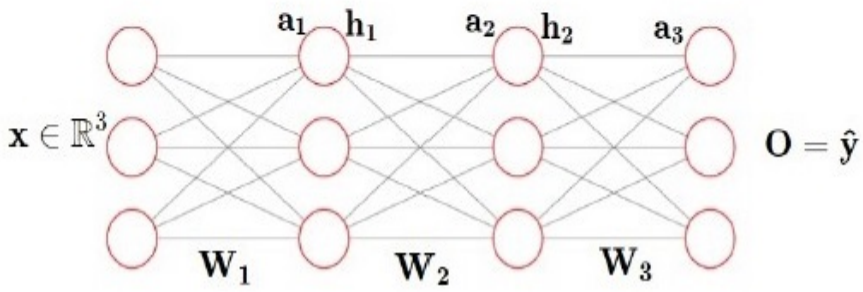
Sub-Section Number :	6
Sub-Section Id :	64065356046
Question Shuffling Allowed :	No

Question Id : 640653389077 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 : (111 to 115)

Question Label : Comprehension

Consider a feed forward neural network shown below where, $\mathbf{x}$ is an input vector. The vectors a_l, h_l correspond to the pre-activation and activation at layer l. The matrices $\mathbf{W_1}$ are weights that connect neurons from layer $l-1$ to layer l. Finally, the vector $\mathbf{o}$ is an output vector $\mathbf{o} = \mathbf{h_3} = \hat{y}$. All neurons in the hidden layer use logistic activation function, and neurons in the output layer use softmax function. Further, the network minimizes cross entropy loss.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 111 Question Id : 640653389078 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 vector(s) that is (are) inappropriate given the network

Options :

6406531293024. ✔ $\mathbf{h_2} = \begin{bmatrix} 0.25 \\ -0.25 \\ 0 \end{bmatrix}$

6406531293025. ✔ $\mathbf{h_1} = \begin{bmatrix} 0 \\ -0.9 \\ 0.34 \end{bmatrix}$

6406531293026. ✖ $\hat{\mathbf{y}} = \begin{bmatrix} 0.1 \\ 0.8 \\ 0.1 \end{bmatrix}$

$$\hat{y} = \begin{bmatrix} 0.3 \\ 0.8 \\ 0.1 \end{bmatrix}$$

6406531293027. ✔

Question Number : 112 Question Id : 640653389079 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

Compute the vector $\mathbf{a_3}$ and write the sum of the elements of $\mathbf{a_3}$. If your answer is -1.2437, then enter it as -1.24.

$$\mathbf{h_2} = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} \quad \mathbf{W_3} = \begin{bmatrix} 0.5 & 0.25 & 0.9 \\ -0.5 & 0 & 0.75 \\ 0 & 0 & 1 \end{bmatrix}, \quad \mathbf{b_3} = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

3.6 to 3.7

Question Number : 113 Question Id : 640653389080 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

Compute $\hat{y}$ (In all your calculations, take two digits after the decimal points and choose the answer that is closest to the given options)

Options :

6406531293029. ✖ $\hat{y} = [0.73, 0.09, 0.18]^T$

6406531293030. ✔ $\hat{y} = [0.32, 0.10, 0.58]^T$

6406531293031. ✖ $\hat{y} = [0.50, 0.16, 0.34]^T$

6406531293032. ✖ $\hat{y} = [0.73, 0.18, 0.09]^T$

Question Number : 114 Question Id : 640653389081 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

Suppose that the true one-hot encoded label is $\mathbf{y} = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$. Compute the loss (use natural log) and enter it using upto two decimal points (that is, if your answer is 40.2345, then enter it as 40.23)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.52 to 0.56

Question Number : 115 Question Id : 640653389082 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

Compute the gradient of loss with respect to the output $\hat{y}$, that is, $\nabla_{\hat{y}} L$ and choose the sum of the elements of $\nabla_{\hat{y}} L$

Options :

6406531293034. ✖ 1.85

6406531293035. ✖ -1.85

6406531293036. ✖ 1.72

6406531293037. ✔ -1.72