UGC-NET Dec 2018

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Test Date:	20/12/2018
Test Time:	9:30 AM - 1:00 PM
Subject:	87 Computer Science and Applications

Section : **00 General Aptitude**

Q.1 The characteristics of scientific method of research are :

(a) Empiricism (b) Objectivity (c) Systematic
(d) Secretive (e) Security related (f) Predictive

Code :

Options

1. (a), (b), (c) and (f)
2. (d), (e), (f) and (a)
3. (c), (d), (e) and (f)
4. (a), (b), (d) and (e)

Question Type : **MCQ**
Question ID : **91394310698**
Option 1 ID : **91394342024**
Option 2 ID : **91394342023**
Option 3 ID : **91394342022**
Option 4 ID : **91394342021**
Status : **Answered**
Chosen Option : **4**

Q.2 Which among the following best describes emotional intelligence as a learner characteristic ?

(a) Recognise their own and other people's emotions
(b) Expressing their emotions strongly
(c) Use emotional information to guide thinking and behaviour
(d) Good observation, scientific thinking and deductive reasoning
(e) Adjusting emotions to adapt to environments
(f) Being creative and open to diverse viewpoints

Code :

Options

1. (a), (d) and (f)
2. (a), (c) and (e)
3. (b), (d) and (e)
4. (c), (e) and (f)

Question Type : **MCQ**
Question ID : **91394310693**
Option 1 ID : **91394342001**
Option 2 ID : **91394342003**

Option 3 ID : **91394342004**
Option 4 ID : **91394342002**
Status : **Answered**
Chosen Option : **2**

Q.3 The kind of numbers which do not represent amounts but instead represent kind (different qualities, types or categories) are called as :

Options

1. Absolute
2. Ordinal
3. Nominal
4. Prime

Question Type : **MCQ**
Question ID : **91394310701**
Option 1 ID : **91394342036**
Option 2 ID : **91394342034**
Option 3 ID : **91394342033**
Option 4 ID : **91394342035**
Status : **Answered**
Chosen Option : **3**

Q.4 In teaching learning context, results of an evaluation are useful to teachers in various ways. Which among the following is most important use for a teacher ?

Options

1. to identify home influence on students.
2. to decide placement of students in other institutions.
3. planning instruction and knowing the effectiveness of the teaching strategies used by them.
4. getting information about student's study interests.

Question Type : **MCQ**
Question ID : **91394310697**
Option 1 ID : **91394342020**
Option 2 ID : **91394342019**
Option 3 ID : **91394342017**
Option 4 ID : **91394342018**
Status : **Answered**
Chosen Option : **3**

Q.5 Poster sessions in research conferences provide better opportunities for :

Options

1. Focus group discussions
2. Inter-personal interactions
3. Formal speeches
4. Display of common interest

Question Type : **MCQ**
Question ID : **91394310702**
Option 1 ID : **91394342039**
Option 2 ID : **91394342040**
Option 3 ID : **91394342037**
Option 4 ID : **91394342038**
Status : **Answered**
Chosen Option : **4**

Q.6 In a school, in which there are large number of failures, you may like to develop test for eliminating those who are likely to have substantial difficulties in meeting the academic goals of teaching. For this you need to develop test which should be able to predict the individual's ability or readiness to undertake the study of a school subject successfully. What is the name of such tests ?

Options

1. Prognostic tests
2. Analytical tests
3. Achievement tests
4. Attitude tests

Question Type : **MCQ**
Question ID : **91394310696**
Option 1 ID : **91394342013**
Option 2 ID : **91394342016**
Option 3 ID : **91394342014**
Option 4 ID : **91394342015**
Status : **Answered**
Chosen Option : **1**

Q.7 The goal of formative assessment is to :

Options

1. Promote student to next level
2. Monitor student learning to provide ongoing feedback
3. Compare student learning against a standard or benchmark
4. Form a group of students on the basis of their learning

Question Type : **MCQ**
Question ID : **91394310695**
Option 1 ID : **91394342009**
Option 2 ID : **91394342010**
Option 3 ID : **91394342011**
Option 4 ID : **91394342012**
Status : **Answered**
Chosen Option : **2**

Q.8 In a research setting, participants may act differently because they think they are getting special attention. This reaction of treatment group to the special attention rather than the treatment itself is called as :

Options

1. Attention deficit

2. Jung effect
3. Marlov effect
4. Hawthrone effect

Question Type : **MCQ**
Question ID : **91394310699**
Option 1 ID : **91394342026**
Option 2 ID : **91394342027**
Option 3 ID : **91394342028**
Option 4 ID : **91394342025**
Status : **Answered**
Chosen Option : **3**

Q.9 When a reviewer reviews a research article without knowing the author's name, it is referred to as :

Options

1. Anonymous review
2. Behind - the - curtain review
3. Blind review
4. Uncategorised review

Question Type : **MCQ**
Question ID : **91394310700**
Option 1 ID : **91394342029**
Option 2 ID : **91394342030**
Option 3 ID : **91394342031**
Option 4 ID : **91394342032**
Status : **Answered**
Chosen Option : **2**

Q.10 Which among the following can best be used as an asynchronous teaching aid ?

(a) Skype (b) Blog (c) Facebook post
(d) Online chat (e) Email (f) Google Hangout

Code :

Options

1. (a), (c) and (f)
2. (a), (b) and (c)
3. (b), (c) and (e)
4. (c), (e) and (f)

Question Type : **MCQ**
Question ID : **91394310694**
Option 1 ID : **91394342005**
Option 2 ID : **91394342007**
Option 3 ID : **91394342008**
Option 4 ID : **91394342006**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Read the passage carefully and answer questions **11** to **15** :

Today, in the digital age, who owns information owns the future. In this digital world, we face a fundamental choice between open and closed. In an open world information is shared by all freely available to everyone. In a closed world information is exclusively owned and controlled by a few. Today, we live in a closed world a world of extraordinary and growing concentrations in power and wealth. A world where innovation is held back and distorted by the dead hand of monopoly; where essential medicines are affordable only to the rich, where freedom is threatened by manipulation, exclusion and exploitation; and each click you make, every step you take, they will be watching you. By contrast, in an open world all of us would be enriched by the freedom to use, enjoy and build on everything from statistics and research to newspaper stories and books, from software and films to music and medical formulae. In an open world, we would pay innovators and creators more and more fairly, using market-driven remuneration rights in place of intellectual property monopoly rights. As they have improved, digital technologies have taken on ever more of the tasks that humans used to do, from manufacturing cars to scheduling appointments. And in the next few decades, artificial intelligence may well be not only driving our cars for us but drafting legal contracts and performing surgery. On the face of it, we have much to gain if machines can spare us tedious or routine tasks and perform them with greater accuracy. The danger, though, is that robots run on information-software, data algorithms and at present the ownership of this sort of information is unequal. And because it is protected by our closed system of intellectual property rights.

SubQuestion No : 11

Q.11 Which of these characteristics of a closed world ?

(a) Concentration in power and wealth increases.
(b) Innovation is controlled.
(c) Only the rich have access to medicines.
(d) Freedom is manipulated.
(e) Information is shared by all.
(f) Creativity is recognised.

Code :

Options

1. (c), (d), (e) and (f)
2. (a), (b), (c) and (d)
3. (d), (e), (f) and (a)
4. (b), (c), (d) and (e)

Question Type : **MCQ**
Question ID : **91394310705**
Option 1 ID : **91394342047**
Option 2 ID : **91394342045**
Option 3 ID : **91394342048**
Option 4 ID : **91394342046**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Read the passage carefully and answer questions **11** to **15** :

Today, in the digital age, who owns information owns the future. In this digital world, we face a fundamental choice between open and closed. In an open world information is shared by all freely available to everyone. In a closed world information is exclusively owned and controlled by a few. Today, we live in a closed world a world of extraordinary and growing concentrations in power and wealth. A world where innovation is held back and distorted by the dead hand of monopoly; where essential medicines are affordable only to the rich, where freedom is threatened by manipulation, exclusion and exploitation; and each click you make, every step you take, they will be watching you. By contrast, in an open world all of us would be enriched by the freedom to use, enjoy and build on everything from statistics and research to newspaper stories and books, from software and films to music and medical formulae. In an open world, we would pay innovators and creators more and more fairly, using market-driven remuneration rights in place of intellectual property monopoly rights. As they have improved, digital technologies have taken on ever more of the tasks that humans used to do, from manufacturing cars to scheduling appointments. And in the next few decades, artificial intelligence may well be not only driving our cars for us but drafting legal contracts and performing surgery. On the face of it, we have much to gain if machines can spare us tedious or routine tasks and perform them with greater accuracy. The danger, though, is that robots run on information-software, data algorithms and at present the ownership of this sort of information is unequal. And because it is protected by our closed system of intellectual property rights.

SubQuestion No : 12

Q.12 How will an open world function ?

Options

1. With limited choices
2. Information is controlled
3. Information is exclusive
4. Information is available to everyone

Question Type : **MCQ**
Question ID : **91394310704**
Option 1 ID : **91394342041**
Option 2 ID : **91394342044**
Option 3 ID : **91394342043**
Option 4 ID : **91394342042**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the passage carefully and answer questions **11** to **15** :

Today, in the digital age, who owns information owns the future. In this digital world, we face a fundamental choice between open and closed. In an open world information is shared by all freely available to everyone. In a closed world information is exclusively owned and controlled by a few. Today, we live in a closed world a world of extraordinary and growing concentrations in power and wealth. A world where innovation is held back and distorted by the dead hand of monopoly; where essential medicines are affordable only to the rich, where freedom is threatened by manipulation, exclusion and exploitation; and each click you make, every step you take, they will be watching you. By contrast, in an open world all of us would be enriched by the freedom to use, enjoy and build on everything from statistics and research to newspaper stories and books, from software and films to music and medical formulae. In an open world, we would pay innovators and creators more and more fairly, using market-driven remuneration rights in place of intellectual property monopoly rights. As they have improved, digital technologies have taken on ever more of the tasks that humans used to do, from manufacturing cars to scheduling appointments. And in the next few decades, artificial intelligence may well be not only driving our cars for us but drafting legal contracts and performing surgery. On the face of it, we have much to gain if machines can spare us tedious or routine tasks and perform them with greater accuracy. The danger, though, is that robots run on information-software, data algorithms and at present the ownership of this sort of information is unequal. And because it is protected by our closed system of intellectual property rights.

SubQuestion No : 13

Q.13

The crux of the passage contains the following statements :

(a) Digital technology is dangerous.

(b) Those who own information will own the future.

(c) Artificial intelligence will do the human tasks.

(d) Monopoly of digital technology has led to unequal ownership of information.

(e) Intellectual property rights should be protected in an open world.

Code :

Options

1. (d), (e) and (a)
2. (a), (b) and (c)
3. (c), (d) and (e)
4. (b), (c) and (d)

Question Type : **MCQ**
Question ID : **91394310708**
Option 1 ID : **91394342060**
Option 2 ID : **91394342057**
Option 3 ID : **91394342059**
Option 4 ID : **91394342058**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the passage carefully and answer questions **11** to **15** :

Today, in the digital age, who owns information owns the future. In this digital world, we face a fundamental choice between open and closed. In an open world information is shared by all freely available to everyone. In a closed world information is exclusively owned and controlled by a few. Today, we live in a closed world a world of extraordinary and growing concentrations in power and wealth. A world where innovation is held back and distorted by the dead hand of monopoly; where essential medicines are affordable only to the rich, where freedom is threatened by manipulation, exclusion and exploitation; and each click you make, every step you take, they will be watching you. By contrast, in an open world all of us would be enriched by the freedom to use, enjoy and build on everything from statistics and research to newspaper stories and books, from software and films to music and medical formulae. In an open world, we would pay innovators and creators more and more fairly, using market-driven remuneration rights in place of intellectual property monopoly rights. As they have improved, digital technologies have taken on ever more of the tasks that humans used to do, from manufacturing cars to scheduling appointments. And in the next few decades, artificial intelligence may well be not only driving our cars for us but drafting legal contracts and performing surgery. On the face of it, we have much to gain if machines can spare us tedious or routine tasks and perform them with greater accuracy. The danger, though, is that robots run on information-software, data algorithms and at present the ownership of this sort of information is unequal. And because it is protected by our closed system of intellectual property rights.

SubQuestion No : 14

Q.14 What is the status of intellectual property rights in an open world ?

Options

1. Medical formulae are restricted
2. They are monopoly rights
3. Protected proprietorial rights
4. Replaced by remuneration rights

Question Type : **MCQ**
Question ID : **91394310706**
Option 1 ID : **91394342050**
Option 2 ID : **91394342049**

Option 3 ID : **91394342052**
Option 4 ID : **91394342051**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Read the passage carefully and answer questions **11** to **15** :

Today, in the digital age, who owns information owns the future. In this digital world, we face a fundamental choice between open and closed. In an open world information is shared by all freely available to everyone. In a closed world information is exclusively owned and controlled by a few. Today, we live in a closed world a world of extraordinary and growing concentrations in power and wealth. A world where innovation is held back and distorted by the dead hand of monopoly; where essential medicines are affordable only to the rich, where freedom is threatened by manipulation, exclusion and exploitation; and each click you make, every step you take, they will be watching you. By contrast, in an open world all of us would be enriched by the freedom to use, enjoy and build on everything from statistics and research to newspaper stories and books, from software and films to music and medical formulae. In an open world, we would pay innovators and creators more and more fairly, using market-driven remuneration rights in place of intellectual property monopoly rights. As they have improved, digital technologies have taken on ever more of the tasks that humans used to do, from manufacturing cars to scheduling appointments. And in the next few decades, artificial intelligence may well be not only driving our cars for us but drafting legal contracts and performing surgery. On the face of it, we have much to gain if machines can spare us tedious or routine tasks and perform them with greater accuracy. The danger, though, is that robots run on information-software, data algorithms and at present the ownership of this sort of information is unequal. And because it is protected by our closed system of intellectual property rights.

SubQuestion No : 15

Q.15 What is the impact of digital technologies on the present day world ?

Options

1. Creativity is sidelined.
2. Tedious tasks see an upward trend.
3. Mechanical accuracy is distorted.
4. Human tasks are performed by machines.

Question Type : **MCQ**
Question ID : **91394310707**
Option 1 ID : **91394342053**
Option 2 ID : **91394342055**
Option 3 ID : **91394342054**
Option 4 ID : **91394342056**
Status : **Answered**
Chosen Option : **1**

Q.16 Inductive argument proceeds from :

Options

1. Particulars to Universals
2. Universals to Universals
3. Particulars to Particulars
4. Universals to Particulars

Question Type : **MCQ**
Question ID : **91394310722**
Option 1 ID : **91394342114**
Option 2 ID : **91394342116**

Option 3 ID : **91394342113**
Option 4 ID : **91394342115**
Status : **Answered**
Chosen Option : **1**

Q.17 Modern educational communication is described as :

Options
1. Un-approximate
2. Telescopic
3. Teleologic
4. Non-distributive

Question Type : **MCQ**
Question ID : **91394310710**
Option 1 ID : **91394342067**
Option 2 ID : **91394342068**
Option 3 ID : **91394342065**
Option 4 ID : **91394342066**
Status : **Answered**
Chosen Option : **3**

Q.18 The reasoning which would be helpful in seeking new knowledge of facts about the world is :

Options
1. Inductive
2. Deductive
3. Speculative
4. Demonstrative

Question Type : **MCQ**
Question ID : **91394310720**
Option 1 ID : **91394342107**
Option 2 ID : **91394342106**
Option 3 ID : **91394342108**
Option 4 ID : **91394342105**
Status : **Answered**
Chosen Option : **2**

Q.19 Which of these words is different from the rest ?

Options
1. Tall
2. Thin
3. Sharp
4. Huge

Question Type : **MCQ**

Question ID : **91394310717**
Option 1 ID : **91394342093**
Option 2 ID : **91394342095**
Option 3 ID : **91394342096**
Option 4 ID : **91394342094**
Status : **Answered**
Chosen Option : **4**

Q.20 The next number in the series 12, 15, 21, 33, 57, _____ is :

Options
1. 107
2. 105
3. 97
4. 95

Question Type : **MCQ**
Question ID : **91394310715**
Option 1 ID : **91394342086**
Option 2 ID : **91394342088**
Option 3 ID : **91394342087**
Option 4 ID : **91394342085**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.21 In which of the following instances, deductive argument is invalid ?

Options
1. When its premises and conclusion are all false.
2. When its premises and conclusion are all true.
3. When its premises are false and conclusion is true.
4. When its premises are true but conclusion is false.

Question Type : **MCQ**
Question ID : **91394310719**
Option 1 ID : **91394342101**
Option 2 ID : **91394342102**
Option 3 ID : **91394342104**
Option 4 ID : **91394342103**
Status : **Answered**
Chosen Option : **4**

Q.22

Given below are two premises with four conclusions drawn from them (taking singly or together). Which of the following conclusions could be validly drawn from the premises ?

Premises : (i) All cats are animals.
(ii) Birds are not cats.

Conclusions : (a) Birds are not animals.
(b) Cats are not Birds.
(c) All animals are cats.
(d) Some animals are cats.

Select the **correct** answer from the code given below :

Code :

Options

1. (b) and (d)
2. (a), (b) and (d)
3. (b), (c) and (d)
4. (a) and (c)

Question Type : **MCQ**
Question ID : **91394310721**
Option 1 ID : **91394342110**
Option 2 ID : **91394342109**
Option 3 ID : **91394342112**
Option 4 ID : **91394342111**
Status : **Answered**
Chosen Option : **1**

Q.23 Effective classroom communication would help students internalise :

(a) Knowledge (b) Subject matter
(c) Articulation (d) Language felicity
(e) Non-responsiveness (f) Modalities of resistance

Code :

Options

1. (a), (b), (c) and (d)
2. (c), (d), (e) and (f)
3. (a), (d), (e) and (f)
4. (b), (c), (d) and (e)

Question Type : **MCQ**
Question ID : **91394310711**
Option 1 ID : **91394342069**
Option 2 ID : **91394342071**
Option 3 ID : **91394342072**
Option 4 ID : **91394342070**
Status : **Answered**
Chosen Option : **1**

Q.24 The next term in the letter series DY, JX, OW, SV, VU, _____ is :

Options

1. XS
2. XT

3. WV
4. YT

Question Type : **MCQ**
Question ID : **91394310716**
Option 1 ID : **91394342091**
Option 2 ID : **91394342090**
Option 3 ID : **91394342089**
Option 4 ID : **91394342092**
Status : **Answered**
Chosen Option : **2**

Q.25 Among the following statements, two are contradictory to each other.

Statements :

(a) All men are humans.
(b) Some men are humans.
(c) Some men are not humans.
(d) No men are humans.

Select the code that represents them :

Code :

Options

1. (a) and (b)
2. (a) and (d)
3. (b) and (c)
4. (a) and (c)

Question Type : **MCQ**
Question ID : **91394310723**
Option 1 ID : **91394342117**
Option 2 ID : **91394342118**
Option 3 ID : **91394342120**
Option 4 ID : **91394342119**
Status : **Answered**
Chosen Option : **4**

Q.26 Classroom communication has a basis in :

Options

1. Non-informative cues
2. Intensive listener focus
3. Audience fragmentation
4. Attention diversion

Question Type : **MCQ**
Question ID : **91394310713**
Option 1 ID : **91394342078**
Option 2 ID : **91394342080**

Option 3 ID : **91394342077**
Option 4 ID : **91394342079**
Status : **Answered**
Chosen Option : **2**

Q.27 In verbal communication, words act as :

Options
1. Decoratives
2. Fillers
3. Symbols
4. Passive barriers

Question Type : **MCQ**
Question ID : **91394310709**
Option 1 ID : **91394342062**
Option 2 ID : **91394342061**
Option 3 ID : **91394342063**
Option 4 ID : **91394342064**
Status : **Answered**
Chosen Option : **3**

Q.28 If FACE is coded as HCEG, then the code for HIGH will be :

Options
1. JKIJ
2. KHIK
3. ZXYZ
4. BEFB

Question Type : **MCQ**
Question ID : **91394310714**
Option 1 ID : **91394342084**
Option 2 ID : **91394342083**
Option 3 ID : **91394342082**
Option 4 ID : **91394342081**
Status : **Answered**
Chosen Option : **1**

Q.29 Ram said to Shyam, "That girl playing with the doll, is the younger of the two daughters of my father's wife".
How is the girl playing with the doll is related to Ram ?

Options
1. Sister-in-law
2. Aunty
3. Cousin
4. Sister

Question Type : **MCQ**

Question ID : **91394310718**
Option 1 ID : **91394342099**
Option 2 ID : **91394342098**
Option 3 ID : **91394342100**
Option 4 ID : **91394342097**
Status : **Answered**
Chosen Option : **4**

Q.30 The challenging behaviours of students as related to communication are :

(a) purposive challenges (b) critical challenges
(c) procedural challenges (d) evaluation challenges
(e) practicality challenges (f) power challenges

Code :

Options
1. (c), (d), (e) and (f)
2. (b), (c), (d) and (f)
3. (d), (e), (f) and (a)
4. (a), (b), (c) and (d)

Question Type : **MCQ**
Question ID : **91394310712**
Option 1 ID : **91394342075**
Option 2 ID : **91394342074**
Option 3 ID : **91394342076**
Option 4 ID : **91394342073**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Subject	Total number of students appeared	Number of students who passed	Number of students who failed	Maximum/ Full marks in the subject
English	600	-	36	600
Mathematics	-	240	60	-
Science	300	216	-	400
Social Studies	360	-	48	400
Computer	-	168	32	400

Study the table given above carefully. It shows the number of students appeared, passed and failed in five subjects. The full marks in each subject is also given.
Some of the cells have missing data. You might need to determine some of the missing data to answer the questions below.

SubQuestion No : 31

Q.31 What is the approximate difference in percentage between the pass % in Social Studies and the pass % in Mathematics ?

Options
1. 16.5%
2. 26.5%
3. 2.5%

4. 6.5%

Question Type : **MCQ**
Question ID : **91394310728**
Option 1 ID : **91394342135**
Option 2 ID : **91394342136**
Option 3 ID : **91394342133**
Option 4 ID : **91394342134**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Subject	Total number of students appeared	Number of students who passed	Number of students who failed	Maximum/ Full marks in the subject
English	600	-	36	600
Mathematics	-	240	60	-
Science	300	216	-	400
Social Studies	360	-	48	400
Computer	-	168	32	400

Study the table given above carefully. It shows the number of students appeared, passed and failed in five subjects. The full marks in each subject is also given.

Some of the cells have missing data. You might need to determine some of the missing data to answer the questions below.

SubQuestion No : 32

Q.32 What is the maximum marks that a student can score in all the five subjects together ? (You may use the answer of the previous question.)

Options

1. 1500
2. 1000
3. 2000
4. 500

Question Type : **MCQ**
Question ID : **91394310726**
Option 1 ID : **91394342127**
Option 2 ID : **91394342126**
Option 3 ID : **91394342128**
Option 4 ID : **91394342125**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Subject	Total number of students appeared	Number of students who passed	Number of students who failed	Maximum/ Full marks in the subject
English	600	-	36	600
Mathematics	-	240	60	-
Science	300	216	-	400
Social Studies	360	-	48	400
Computer	-	168	32	400

Study the table given above carefully. It shows the number of students appeared, passed and failed in five subjects. The full marks in each subject is also given.

Some of the cells have missing data. You might need to determine some of the missing data to answer the questions below.

SubQuestion No : 33

Q.33 In which subject, was the failure percent the least ?

Options

1. Mathematics
2. Social Studies
3. Science
4. English

Question Type : **MCQ**
Question ID : **91394310729**
Option 1 ID : **91394342138**
Option 2 ID : **91394342140**
Option 3 ID : **91394342139**
Option 4 ID : **91394342137**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Subject	Total number of students appeared	Number of students who passed	Number of students who failed	Maximum/ Full marks in the subject
English	600	-	36	600
Mathematics	-	240	60	-
Science	300	216	-	400
Social Studies	360	-	48	400
Computer	-	168	32	400

Study the table given above carefully. It shows the number of students appeared, passed and failed in five subjects. The full marks in each subject is also given.

Some of the cells have missing data. You might need to determine some of the missing data to answer the questions below.

SubQuestion No : 34

Q.34 What is the difference between the number of failed students in Science and the number of passed in Social Studies ?

Options

1. 228
2. 238

3. 218

4. 312

Question Type : **MCQ**
Question ID : **91394310727**
Option 1 ID : **91394342129**
Option 2 ID : **91394342130**
Option 3 ID : **91394342132**
Option 4 ID : **91394342131**
Status : **Not Answered**
Chosen Option : **--**

Comprehension:

Subject	Total number of students appeared	Number of students who passed	Number of students who failed	Maximum/ Full marks in the subject
English	600	-	36	600
Mathematics	-	240	60	-
Science	300	216	-	400
Social Studies	360	-	48	400
Computer	-	168	32	400

Study the table given above carefully. It shows the number of students appeared, passed and failed in five subjects. The full marks in each subject is also given.

Some of the cells have missing data. You might need to determine some of the missing data to answer the questions below.

SubQuestion No : 35

Q.35 Which of the following could be the full marks in Mathematics if the pass marks in Mathematics was 35% and the person who just passed scored 70 ?

Options

1. 200

2. 500

3. 600

4. 400

Question Type : **MCQ**
Question ID : **91394310725**
Option 1 ID : **91394342124**
Option 2 ID : **91394342122**
Option 3 ID : **91394342123**
Option 4 ID : **91394342121**
Status : **Not Answered**
Chosen Option : **--**

Q.36 An earthquake is rated as 'major' if its magnitude in Richter Scale is in the range of :

Options

1. 7.0 - 7.9

2. 5.0 - 5.9

3. 4.0 - 4.9

4. 6.0 - 6.9

Question Type : **MCQ**
Question ID : **91394310737**
Option 1 ID : **91394342172**
Option 2 ID : **91394342170**
Option 3 ID : **91394342169**
Option 4 ID : **91394342171**
Status : **Not Answered**
Chosen Option : **--**

Q.37 The first Open University established in India is :

Options
1. Bhim Rao Ambedkar Open University, Hyderabad
2. Nalanda Open University, Patna
3. Yashwantrao Chavan Maharashtra Open University, Nasik
4. Tamil Nadu Open University, Chennai

Question Type : **MCQ**
Question ID : **91394310740**
Option 1 ID : **91394342183**
Option 2 ID : **91394342182**
Option 3 ID : **91394342181**
Option 4 ID : **91394342184**
Status : **Answered**
Chosen Option : **1**

Q.38 Plants suitable for biomonitoring of Sulphur Dioxide pollution are :

Options
1. Tobacco, grapes and garden bean
2. Apricot, peach and gladiolus
3. White pine, moss and lichens
4. Tomato and lettuce

Question Type : **MCQ**
Question ID : **91394310736**
Option 1 ID : **91394342167**
Option 2 ID : **91394342168**
Option 3 ID : **91394342165**
Option 4 ID : **91394342166**
Status : **Answered**
Chosen Option : **3**

Q.39 A Terabyte is equal to :

Options
1. 1024 Gigabytes

2. 1024 × 1024 Kilobytes
3. 1024 Megabytes
4. 1024 Kilobytes

Question Type : **MCQ**
Question ID : **91394310731**
Option 1 ID : **91394342146**
Option 2 ID : **91394342147**
Option 3 ID : **91394342145**
Option 4 ID : **91394342148**
Status : **Answered**
Chosen Option : **1**

Q.40 Which of the given statements are **true** ?

(a) Modem is a Networking device.
(b) Modem is a Voltage stabilizer.
(c) Modem converts analogue signal to digital signal and vice-versa.

Code :

Options
1. (a) and (c)
2. (b) and (c)
3. (a), (b) and (c)
4. (a) and (b)

Question Type : **MCQ**
Question ID : **91394310734**
Option 1 ID : **91394342159**
Option 2 ID : **91394342158**
Option 3 ID : **91394342160**
Option 4 ID : **91394342157**
Status : **Answered**
Chosen Option : **1**

Q.41 The Council of Rural Institutes Authority is situated at :

Options
1. Ahmedabad
2. Ludhiana
3. Hyderabad
4. Pune

Question Type : **MCQ**
Question ID : **91394310744**
Option 1 ID : **91394342198**
Option 2 ID : **91394342197**
Option 3 ID : **91394342200**
Option 4 ID : **91394342199**
Status : **Answered**

Chosen Option : **1**

Q.42 Full form of PDF is :

Options

1. Portable Document Format
2. Portable Data Form
3. Portable Data Format
4. Portable Document Form

Question Type : **MCQ**
Question ID : **91394310730**
Option 1 ID : **91394342141**
Option 2 ID : **91394342144**
Option 3 ID : **91394342142**
Option 4 ID : **91394342143**
Status : **Answered**
Chosen Option : **1**

Q.43 The biggest hindrance in using biomass as a major energy source is :

Options

1. Air pollution due to combustion.
2. Technology not well developed for commercialisation.
3. Energy yield of low level.
4. Large amount of land required to grow energy crops.

Question Type : **MCQ**
Question ID : **91394310738**
Option 1 ID : **91394342176**
Option 2 ID : **91394342173**
Option 3 ID : **91394342174**
Option 4 ID : **91394342175**
Status : **Answered**
Chosen Option : **1**

Q.44 In 1948, under whose Chairmanship a University Education Commission was set up to reconstruct University Education in India ?

Options

1. Prof. P.C. Joshi
2. Sardar Vallabh Bhai Patel
3. Dr. Vikram Sarabhai
4. Dr. S. Radhakrishnan

Question Type : **MCQ**
Question ID : **91394310741**
Option 1 ID : **91394342186**

Option 2 ID : **91394342185**
Option 3 ID : **91394342188**
Option 4 ID : **91394342187**
Status : **Answered**
Chosen Option : **4**

Q.45 The binary equivalent of $(-23)_{10}$ is (2's complement system for negative numbers is used) :

Options

1. 10111
2. 01001
3. 01000
4. 01010

Question Type : **MCQ**
Question ID : **91394310732**
Option 1 ID : **91394342149**
Option 2 ID : **91394342150**
Option 3 ID : **91394342152**
Option 4 ID : **91394342151**
Status : **Answered**
Chosen Option : **2**

Q.46 University and University-level institutions are categorised into :

(a) Central Universities (b) State Universities
(c) Private Universities (d) Deemed-to-be Universities
(e) Institutions of Higher Learning (f) Civil Sector Institutions

Code :

Options

1. (c), (d), (e) and (f)
2. (a), (b), (c) and (d)
3. (a), (c), (e) and (f)
4. (b), (d), (e) and (f)

Question Type : **MCQ**
Question ID : **91394310742**
Option 1 ID : **91394342192**
Option 2 ID : **91394342191**
Option 3 ID : **91394342189**
Option 4 ID : **91394342190**
Status : **Answered**
Chosen Option : **2**

Q.47 "e-Pathshala" is an initiative by :

Options

1. NCERT
2. CBSE
3. NCTE

4. UGC

Question Type : **MCQ**
Question ID : **91394310743**
Option 1 ID : **91394342195**
Option 2 ID : **91394342194**
Option 3 ID : **91394342196**
Option 4 ID : **91394342193**
Status : **Answered**
Chosen Option : **2**

Q.48 Which among the following industries, consumes maximum water in India ?

Options

1. Textiles
2. Paper and pulp
3. Thermal power plants
4. Engineering

Question Type : **MCQ**
Question ID : **91394310735**
Option 1 ID : **91394342162**
Option 2 ID : **91394342164**
Option 3 ID : **91394342163**
Option 4 ID : **91394342161**
Status : **Answered**
Chosen Option : **2**

Q.49 **Assertion (A) :** Climate change is going to increase social tension in India.
Reason (R) : The frequency and intensity of the extreme weather events will have serious consequences for food security.
Code :

Options

1. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**.
2. Both **(A)** and **(R)** are true and **(R)** is not the correct explanation of **(A)**.
3. **(A)** is false, but **(R)** is true.
4. **(A)** is true, but **(R)** is false.

Question Type : **MCQ**
Question ID : **91394310739**
Option 1 ID : **91394342177**
Option 2 ID : **91394342178**
Option 3 ID : **91394342180**
Option 4 ID : **91394342179**
Status : **Answered**
Chosen Option : **2**

Q.50 DNS stands for :

Options

1. Distributed Name System
2. Domain Name System
3. Domain Name Standard
4. Dynamic Name Standard

Question Type : **MCQ**
Question ID : **91394310733**
Option 1 ID : **91394342155**
Option 2 ID : **91394342154**
Option 3 ID : **91394342153**
Option 4 ID : **91394342156**
Status : **Answered**
Chosen Option : **2**

Section : **87 Computer Science and Applications**

Q.1 Consider the language L given by

$$L = \{2^{nk} \mid k > 0, \text{ and n is non-negative integer number}\}$$

The minimum number of states of finite automaton which accepts the language L is

Options

1. n
2. $\frac{n(n+1)}{2}$
3. 2^n
4. $n+1$

Question Type : **MCQ**
Question ID : **91394310776**
Option 1 ID : **91394342325**
Option 2 ID : **91394342327**
Option 3 ID : **91394342328**
Option 4 ID : **91394342326**
Status : **Answered**
Chosen Option : **2**

Q.2 In 3D Graphics, which of the following statements about perspective and parallel projection is/are true ?

P : In a perspective projection, the farthest an object is from the centre of projection, the smaller it appears.

Q : Parallel projection is equivalent to a perspective projection where the viewer is standing infinitely far away.

R : Perspective projections do not preserve straight lines.

Choose the correct answer from the code given below :

Code :

Options

1. P and R only

2. P, Q and R

3. Q and R only

4. P and Q only

Question Type : **MCQ**
Question ID : **91394310788**
Option 1 ID : **91394342374**
Option 2 ID : **91394342376**
Option 3 ID : **91394342375**
Option 4 ID : **91394342373**
Status : **Answered**
Chosen Option : **2**

Q.3 Which of the following is true for *semi-dynamic* environment ?

Options 1.

The environment itself does not change with the passage of time but the agent's performance score does.

2. Environment and performance score, both change simultaneously.

3. The environment may change while the agent is deliberating.

4.

Even if the environment changes with the passage of time while deliberating, the performance score does not change.

Question Type : **MCQ**
Question ID : **91394310836**
Option 1 ID : **91394342566**
Option 2 ID : **91394342568**
Option 3 ID : **91394342565**
Option 4 ID : **91394342567**
Status : **Answered**
Chosen Option : **2**

Q.4 Consider the following method :

```
int f (int m, int n, boolean x, boolean y)
{
    int res = 0;
    if (m < 0) {res = n – m;}
    else if (x || y) {
                        res = – 1;
                        if (n == m) {res = 1;}
        }
        else  {res = n;}
    return res;
} /* end of f */
```

If P is the minimum number of tests to achieve full statement coverage for f(), and Q is the minimum number of tests to achieve full branch coverage for f(), then (P, Q) =

Options 1. (3, 2)

2. $(3, 4)$

3. $(4, 3)$

4. $(2, 3)$

Question Type : **MCQ**
Question ID : **91394310800**
Option 1 ID : **91394342424**
Option 2 ID : **91394342421**
Option 3 ID : **91394342422**
Option 4 ID : **91394342423**
Status : **Answered**
Chosen Option : **3**

Q.5 Use Dual Simplex Method to solve the following problem :

Maximize $z = -2x_1 - 3x_2$

subject to :

$$x_1 + x_2 \geq 2$$
$$2x_1 + x_2 \leq 10$$
$$x_1 + x_2 \leq 8$$
$$x_1, x_2 \geq 0$$

Options

1. $x_1 = 2, x_2 = 0$, and $z = -4$

2. $x_1 = 2, x_2 = 6$ and $z = -22$

3. $x_1 = 0, x_2 = 2$ and $z = -6$

4. $x_1 = 6, x_2 = 2$ and $z = -18$

Question Type : **MCQ**
Question ID : **91394310753**
Option 1 ID : **91394342233**
Option 2 ID : **91394342234**
Option 3 ID : **91394342235**
Option 4 ID : **91394342236**
Status : **Answered**
Chosen Option : **2**

Q.6 If the frame buffer has 10-bits per pixel and 8-bits are allocated for each of the R, G, and B components, then what would be the size of the color lookup table (LUT) ?

Options

1. $(2^{10} + 2^{11})$ bytes

2. $(2^{10} + 2^{24})$ bytes

3. $(2^{10} + 2^{8})$ bytes

4. $(2^{8} + 2^{9})$ bytes

Question Type : **MCQ**
Question ID : **91394310785**

Option 1 ID : **91394342364**
Option 2 ID : **91394342363**
Option 3 ID : **91394342362**
Option 4 ID : **91394342361**
Status : **Answered**
Chosen Option : **2**

Q.7

Consider the following problems :

(i) Whether a finite state automaton halts on all inputs ?

(ii) Whether a given context free language is regular ?

(iii) Whether a Turing machine computes the product of two numbers ?

Which one of the following is correct ?

Code :

Options

1. Only (i) and (iii) are undecidable problems
2. Only (i) and (ii) are undecidable problems
3. (i), (ii) and (iii) are undecidable problems
4. Only (ii) and (iii) are undecidable problems

Question Type : **MCQ**
Question ID : **91394310781**
Option 1 ID : **91394342345**
Option 2 ID : **91394342347**
Option 3 ID : **91394342348**
Option 4 ID : **91394342346**
Status : **Answered**
Chosen Option : **4**

Q.8

Consider the following languages :

$L_1 = \{a^{n+m} b^n a^m \mid n, m \geq 0\}$

$L_2 = \{a^{n+m} b^{n+m} a^{n+m} \mid n, m \geq 0\}$

Which one of the following is correct ?

Code :

Options

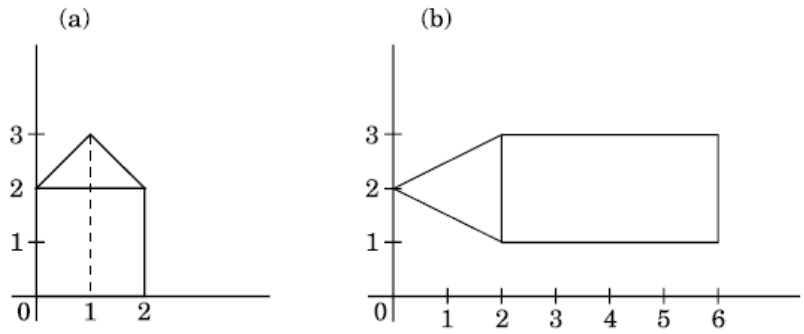
1. Only L_1 is context free language
2. Both L_1 and L_2 are not context free languages
3. Both L_1 and L_2 are context free languages
4. Only L_2 is context free language

Question Type : **MCQ**
Question ID : **91394310779**
Option 1 ID : **91394342337**
Option 2 ID : **91394342340**

Option 3 ID : **91394342339**
Option 4 ID : **91394342338**
Status : **Answered**
Chosen Option : **1**

Q.9

Which homogeneous 2D matrix transforms the figure (a) on the left side to the figure (b) on the right ?



Options

1. $\begin{pmatrix} 1 & -2 & 6 \\ 1 & 0 & 2 \\ 0 & 0 & 1 \end{pmatrix}$

2. $\begin{pmatrix} 0 & 2 & 6 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

3. $\begin{pmatrix} 0 & -2 & 6 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

4. $\begin{pmatrix} 0 & 2 & -6 \\ 2 & 0 & 1 \\ 0 & 0 & 1 \end{pmatrix}$

Question Type : **MCQ**
Question ID : **91394310786**
Option 1 ID : **91394342367**
Option 2 ID : **91394342368**
Option 3 ID : **91394342366**
Option 4 ID : **91394342365**
Status : **Answered**
Chosen Option : **2**

Q.10

A full joint distribution for the Toothache, Cavity and Catch is given in the table below.

	Toothache		¬ Toothache	
	Catch	¬ Catch	Catch	¬ Catch
Cavity	0·108	0·012	0·072	0·008
¬ Cavity	0·016	0·064	0·144	0·576

What is the probability of Cavity, given evidence of Toothache ?

Options

1. < 0·4, 0·8 >
2. < 0·2, 0·8 >
3. < 0·6, 0·8 >
4. < 0·6, 0·4 >

Question Type : **MCQ**
Question ID : **91394310844**
Option 1 ID : **91394342598**
Option 2 ID : **91394342597**
Option 3 ID : **91394342599**
Option 4 ID : **91394342600**
Status : **Answered**
Chosen Option : **2**

Q.11 Match List I with List II and choose the correct answer from the code given below.

	List I		**List II**
(a)	Equivalence	(i)	$p \Rightarrow q$
(b)	Contrapositive	(ii)	$p \Rightarrow q : q \Rightarrow p$
(c)	Converse	(iii)	$p \Rightarrow q : \sim q \Rightarrow \sim p$
(d)	Implication	(iv)	$p \Leftrightarrow q$

Code :

Options

1. (a)–(iv), (b)–(iii), (c)–(ii), (d)–(i)
2. (a)–(i), (b)–(ii), (c)–(iii), (d)–(iv)
3. (a)–(iii), (b)–(iv), (c)–(ii), (d)–(i)
4. (a)–(ii), (b)–(i), (c)–(iii), (d)–(iv)

Question Type : **MCQ**
Question ID : **91394310746**
Option 1 ID : **91394342208**
Option 2 ID : **91394342205**
Option 3 ID : **91394342207**
Option 4 ID : **91394342206**
Status : **Answered**
Chosen Option : **1**

Q.12

The number of substrings that can be formed from string given by

a d e f b g h n m p

is

Options

1. 56
2. 10
3. 45
4. 55

Question Type : **MCQ**
Question ID : **91394310777**
Option 1 ID : **91394342332**
Option 2 ID : **91394342329**
Option 3 ID : **91394342330**
Option 4 ID : **91394342331**
Status : **Answered**
Chosen Option : **3**

Q.13 A survey has been conducted on methods of commuter travel. Each respondent was asked to check Bus, Train or Automobile as a major method of travelling to work. More than one answer was permitted. The results reported were as follows :

Bus 30 people; Train 35 people; Automobile 100 people; Bus and Train 15 people; Bus and Automobile 15 people, Train and Automobile 20 people; and all the three methods 5 people. How many people completed the survey form ?

Options

1. 120
2. 165
3. 115
4. 160

Question Type : **MCQ**
Question ID : **91394310748**
Option 1 ID : **91394342213**
Option 2 ID : **91394342214**
Option 3 ID : **91394342216**
Option 4 ID : **91394342215**
Status : **Answered**
Chosen Option : **2**

Q.14 An Internet Service Provider (ISP) has following chunk of CIDR-based IP addresses available with it : 245.248.128.0/20. The ISP wants to give half of this chunk of addresses to organization A and a quarter to organization B while retaining the remaining with itself. Which of the following is a valid allocation of addresses to A and B ?

Options

1. 245.248.128.0/21 and 245.248.128.0/22
2. 245.248.136.0/24 and 245.248.132.0/21
3. 245.248.136.0/21 and 245.248.128.0/22

4. 245.248.132.0/22 and 245.248.132.0/21

Question Type : **MCQ**
Question ID : **91394310831**
Option 1 ID : **91394342546**
Option 2 ID : **91394342548**
Option 3 ID : **91394342545**
Option 4 ID : **91394342547**
Status : **Answered**
Chosen Option : **2**

Q.15 Suppose P, Q and R are co-operating processes satisfying Mutual Exclusion condition. Then, if the process Q is executing in its critical section then

Options

1. 'R' executes in critical section.
2. Both 'P' and 'R' execute in critical section.
3. 'P' executes in critical section.
4. Neither 'P' nor 'R' executes in their critical section.

Question Type : **MCQ**
Question ID : **91394310818**
Option 1 ID : **91394342496**
Option 2 ID : **91394342493**
Option 3 ID : **91394342495**
Option 4 ID : **91394342494**
Status : **Answered**
Chosen Option : **4**

Q.16 Suppose for a process P, reference to pages in order are 1, 2, 4, 5, 2, 1, 2, 4. Assume that main memory can accomodate 3 pages and the main memory has already pages 1 and 2 in the order 1 – first, 2 – second. At this moment, assume FIFO Page Replacement Algorithm is used then the number of page faults that occur to complete the execution of process P is

Options

1. 5
2. 3
3. 6
4. 4

Question Type : **MCQ**
Question ID : **91394310816**
Option 1 ID : **91394342487**
Option 2 ID : **91394342486**
Option 3 ID : **91394342488**
Option 4 ID : **91394342485**
Status : **Answered**
Chosen Option : **1**

Q.17 A process residing in Main Memory and Ready and Waiting for execution, is kept on

Options

1. Execution Queue

2. Wait Queue

3. Job Queue

4. Ready Queue

Question Type : **MCQ**
Question ID : **91394310819**
Option 1 ID : **91394342497**
Option 2 ID : **91394342500**
Option 3 ID : **91394342498**
Option 4 ID : **91394342499**
Status : **Answered**
Chosen Option : **3**

Q.18 Which of the following statements is/are ***false*** ?

P : The clean-room strategy to software engineering is based on the incremental software process model.

Q : The clean-room strategy to software engineering is one of the ways to overcome "unconscious" copying of copyrighted code.

Choose the correct answer from the code given below :

Code :

Options

1. Neither P nor Q

2. Q only

3. Both P and Q

4. P only

Question Type : **MCQ**
Question ID : **91394310799**
Option 1 ID : **91394342420**
Option 2 ID : **91394342418**
Option 3 ID : **91394342419**
Option 4 ID : **91394342417**
Status : **Answered**
Chosen Option : **4**

Q.19 Which of the following statements is/are true ?

P : Software Reengineering is preferable for software products having high failure rates, having poor design and/or having poor code structure.

Q : Software Reverse Engineering is the process of analyzing software with the objective of recovering its design and requirements specification.

Choose the correct answer from the code given below :

Code :

Options

1. Both P and Q

2. P only

3. Q only

4. Neither P nor Q

Question Type : **MCQ**
Question ID : **91394310802**
Option 1 ID : **91394342431**
Option 2 ID : **91394342429**
Option 3 ID : **91394342430**
Option 4 ID : **91394342432**
Status : **Answered**
Chosen Option : **1**

Q.20 Match the following Secret Key Algorithms (List I) with the Corresponding Key Lengths (List II) and choose the correct answer from the code given below.

	List I		List II
(a)	Blowfish	(i)	128 – 256 bits
(b)	DES	(ii)	128 bits
(c)	IDEA	(iii)	1 – 448 bits
(d)	RC5	(iv)	56 bits

Code :

Options

1. (a)–(iii), (b)–(iv), (c)–(i), (d)–(ii)
2. (a)–(iv), (b)–(iii), (c)–(ii), (d)–(i)
3. (a)–(ii), (b)–(iii), (c)–(iv), (d)–(i)
4. (a)–(iii), (b)–(iv), (c)–(ii), (d)–(i)

Question Type : **MCQ**
Question ID : **91394310805**
Option 1 ID : **91394342442**
Option 2 ID : **91394342441**
Option 3 ID : **91394342444**
Option 4 ID : **91394342443**
Status : **Answered**
Chosen Option : **2**

Q.21 Consider the following two statements :

S1 : TCP handles both congestion and flow control

S2 : UDP handles congestion but not flow control

Which of the following options is correct with respect to the above statements (S1) and S2) ?

Choose the correct answer from the code given below :

Code :

Options

1. S1 is correct but S2 is not correct
2. Neither S1 nor S2 is correct
3. Both, S1 and S2 are correct
4. S1 is not correct but S2 is correct

Question Type : **MCQ**
Question ID : **91394310832**

Option 1 ID : **91394342551**
Option 2 ID : **91394342549**
Option 3 ID : **91394342552**
Option 4 ID : **91394342550**
Status : **Answered**
Chosen Option : **3**

Q.22

Consider the sentence below.

"There is a country that borders both India and Nepal."

Which of the following represents the above sentence correctly ?

Options

1. $\exists c\ \text{Country}(c) \wedge \text{Border}(c, \text{India}) \wedge \text{Border}(c, \text{Nepal})$
2. $[\exists c\ \text{Country}(c)] \Rightarrow [\text{Border}(c, \text{India}) \wedge \text{Border}(c, \text{Nepal})]$
3. $\exists c\ \text{Border}(\text{Country}(c), \text{India} \wedge \text{Nepal})$
4. $\exists c\ \text{Country}(c) \Rightarrow [\text{Border}(c, \text{India}) \wedge \text{Border}(c, \text{Nepal})]$

Question Type : **MCQ**
Question ID : **91394310843**
Option 1 ID : **91394342593**
Option 2 ID : **91394342595**
Option 3 ID : **91394342596**
Option 4 ID : **91394342594**
Status : **Answered**
Chosen Option : **2**

Q.23

Consider R to be any regular language and L_1, L_2 be any two context-free languages.

Which one of the following is correct ?

Options

1. $L_1 \cap L_2$ is context free
2. $\overline{(L_1 \cup L_2)} - R$ is context free
3. $L_1 - R$ is context free
4. $\overline{L_1}$ is context free

Question Type : **MCQ**
Question ID : **91394310780**
Option 1 ID : **91394342343**
Option 2 ID : **91394342342**
Option 3 ID : **91394342344**
Option 4 ID : **91394342341**
Status : **Answered**
Chosen Option : **3**

Q.24

Match List I with List II and choose the correct answer from the code given below.

List I	List II
(a) Greedy Best-First Search	(i) Selects a node for expansion if optimal path to that node has been found.
(b) A* Search	(ii) Avoids substantial overhead associated with keeping the sorted queue of nodes.
(c) Recursive Best-First Search	(iii) Suffers from excessive node generation.
(d) Iterative-deepening A* Search	(iv) Time complexity depends on the quality of heuristic.

Code :

Options

1. (a)–(i), (b)–(iv), (c)–(iii), (d)–(ii)
2. (a)–(iv), (b)–(iii), (c)–(ii), (d)–(i)
3. (a)–(i), (b)–(ii), (c)–(iii), (d)–(iv)
4. (a)–(iv), (b)–(i), (c)–(ii), (d)–(iii)

Question Type : **MCQ**
Question ID : **91394310838**
Option 1 ID : **91394342576**
Option 2 ID : **91394342575**
Option 3 ID : **91394342573**
Option 4 ID : **91394342574**
Status : **Answered**
Chosen Option : **1**

Q.25 Which of the following is ***not*** one of the principles of agile software development method ?

Options

1. Embrace change
2. Incremental delivery
3. Customer involvement
4. Following the plan

Question Type : **MCQ**
Question ID : **91394310803**
Option 1 ID : **91394342434**
Option 2 ID : **91394342435**
Option 3 ID : **91394342433**
Option 4 ID : **91394342436**
Status : **Answered**
Chosen Option : **1**

Q.26 Consider a system with 2 level cache. Access times of Level 1 cache, Level 2 cache and main memory are 0·5 ns, 5 ns and 100 ns respectively. The hit rates of Level 1 and Level 2 caches are 0·7 and 0·8, respectively. What is the average access time of the system ignoring the search time within the cache ?

Options

1. 35·20 ns
2. 24·35 ns
3. 7·55 ns

4. 20·75 ns

Question Type : **MCQ**
Question ID : **91394310763**
Option 1 ID : **91394342273**
Option 2 ID : **91394342276**
Option 3 ID : **91394342274**
Option 4 ID : **91394342275**
Status : **Answered**
Chosen Option : **2**

Q.27 A computer uses a memory unit with 256 K words of 32 bits each. A binary instruction code is stored in one word of memory. The instruction has four parts : an indirect bit, an operation code and a register code part to specify one of 64 registers and an address part. How many bits are there in the operation code, the register code part and the address part ?

Options

1. 18, 7, 7
2. 7, 6, 18
3. 7, 7, 18
4. 6, 7, 18

Question Type : **MCQ**
Question ID : **91394310758**
Option 1 ID : **91394342256**
Option 2 ID : **91394342253**
Option 3 ID : **91394342255**
Option 4 ID : **91394342254**
Status : **Answered**
Chosen Option : **2**

Q.28 An agent can improve its performance by

Options

1. Observing
2. Responding
3. Perceiving
4. Learning

Question Type : **MCQ**
Question ID : **91394310835**
Option 1 ID : **91394342564**
Option 2 ID : **91394342562**
Option 3 ID : **91394342561**
Option 4 ID : **91394342563**
Status : **Answered**
Chosen Option : **2**

Q.29 In PERT/CPM, the merge event represents _____ of two or more events.

Options

1. completion
2. beginning
3. joining
4. splitting

Question Type : **MCQ**
Question ID : **91394310752**
Option 1 ID : **91394342229**
Option 2 ID : **91394342230**
Option 3 ID : **91394342232**
Option 4 ID : **91394342231**
Status : **Answered**
Chosen Option : **1**

Q.30 Suppose a cloud contains software stack such as Operating systems, Application softwares, etc. This model is referred as _____ model.

Options

1. MaaS
2. PaaS
3. SaaS
4. IaaS

Question Type : **MCQ**
Question ID : **91394310808**
Option 1 ID : **91394342456**
Option 2 ID : **91394342454**
Option 3 ID : **91394342453**
Option 4 ID : **91394342455**
Status : **Answered**
Chosen Option : **3**

Q.31 In computers, subtraction is generally carried out by

Options

1. 10's complement
2. 1's complement
3. 9's complement
4. 2's complement

Question Type : **MCQ**
Question ID : **91394310754**
Option 1 ID : **91394342239**
Option 2 ID : **91394342238**
Option 3 ID : **91394342237**
Option 4 ID : **91394342240**
Status : **Answered**
Chosen Option : **4**

Q.32 In Linux operating system environment _____ command is used to print a file.

Options

1. pr
2. ptr
3. print
4. lpr

Question Type : **MCQ**
Question ID : **91394310812**
Option 1 ID : **91394342471**
Option 2 ID : **91394342470**
Option 3 ID : **91394342469**
Option 4 ID : **91394342472**
Status : **Answered**
Chosen Option : **3**

Q.33 Which of the following HTML5 codes will affect the horizontal as well as vertical alignment of the table content ?

Options

1. <td align="middle" valign="center"> BASH </td>
2. <td style="horizontal-align : center; vertical-align : middle;"> BASH </td>
3. <td style="text-align : center; vertical-align : middle;"> BASH </td>
4. <td halign="middle" valign="center"> BASH </td>

Question Type : **MCQ**
Question ID : **91394310794**
Option 1 ID : **91394342398**
Option 2 ID : **91394342399**
Option 3 ID : **91394342400**
Option 4 ID : **91394342397**
Status : **Answered**
Chosen Option : **4**

Q.34 Dirty bit is used to show the

Options

1. page with low frequency occurrence
2. page that is modified after being loaded into cache memory
3. wrong page
4. page with corrupted data

Question Type : **MCQ**
Question ID : **91394310815**
Option 1 ID : **91394342483**
Option 2 ID : **91394342484**
Option 3 ID : **91394342481**

Option 4 ID : **91394342482**
Status : **Answered**
Chosen Option : **2**

Q.35 Identify the correct sequence in which the following packets are transmitted on the network by a host when a browser requests a webpage from a remote server, assuming that the host has just been restarted.

Options

1. TCP SYN, DNS query, HTTP GET request
2. DNS query, HTTP GET request, TCP SYN
3. HTTP GET request, DNS query, TCP SYN
4. DNS query, TCP SYN, HTTP GET request

Question Type : **MCQ**
Question ID : **91394310833**
Option 1 ID : **91394342555**
Option 2 ID : **91394342554**
Option 3 ID : **91394342553**
Option 4 ID : **91394342556**
Status : **Answered**
Chosen Option : **2**

Q.36 Consider the following postfix expression with single digit operands :

6 2 3 * / 4 2 * + 6 8 * –

The top two elements of the stack after the second * is evaluated, are :

Options

1. 8, 2
2. 6, 3
3. 8, 1
4. 6, 2

Question Type : **MCQ**
Question ID : **91394310768**
Option 1 ID : **91394342293**
Option 2 ID : **91394342296**
Option 3 ID : **91394342294**
Option 4 ID : **91394342295**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.37 _____ command is used to remove a relation from an SQL database.

Options

1. Update table
2. Delete table
3. Drop table

4. Remove table

Question Type : **MCQ**
Question ID : **91394310823**
Option 1 ID : **91394342516**
Option 2 ID : **91394342514**
Option 3 ID : **91394342513**
Option 4 ID : **91394342515**
Status : **Answered**
Chosen Option : **3**

Q.38 If a graph (G) has no loops or parallel edges, and if the number of vertices (n) in the graph is $n \geq 3$, then graph G is Hamiltonian if

(i) $\deg(v) \geq \frac{n}{3}$ for each vertex v

(ii) $\deg(v) + \deg(w) \geq n$ whenever v and w are not connected by an edge.

(iii) $E(G) \geq \frac{1}{3}(n-1)(n-2) + 2$

Choose the correct answer from the code given below :

Code :

Options

1. (iii) only
2. (ii) only
3. (i) and (iii) only
4. (ii) and (iii) only

Question Type : **MCQ**
Question ID : **91394310764**
Option 1 ID : **91394342280**
Option 2 ID : **91394342278**
Option 3 ID : **91394342277**
Option 4 ID : **91394342279**
Status : **Answered**
Chosen Option : **2**

Q.39 Consider the following boolean equations :

(i) $wx + w(x + y) + x(x + y) = x + wy$

(ii) $(w\bar{x}(y + x\bar{z}) + \bar{w}\,\bar{x})\,y = \bar{x}y$

What can you say about the above equations ?

Options

1. Both (i) and (ii) are true
2. (i) is false and (ii) is true
3. (i) is true and (ii) is false
4. Both (i) and (ii) are false

Question Type : **MCQ**
Question ID : **91394310755**
Option 1 ID : **91394342243**
Option 2 ID : **91394342242**
Option 3 ID : **91394342241**
Option 4 ID : **91394342244**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.40 Data scrubbing is

Options

1. A process to load the data in the data warehouse and to create the necessary indexes.
2. A process to upgrade the quality of data before it is moved into a data warehouse.
3. A process to reject data from the data warehouse and to create the necessary indexes.
4. A process to upgrade the quality of data after it is moved into a data warehouse.

Question Type : **MCQ**
Question ID : **91394310825**
Option 1 ID : **91394342522**
Option 2 ID : **91394342524**
Option 3 ID : **91394342521**
Option 4 ID : **91394342523**
Status : **Answered**
Chosen Option : **2**

Q.41 Consider a disk pack with 32 surfaces, 64 tracks and 512 sectors per pack. 256 bytes of data are stored in a bit serial manner in a sector. The number of bits required to specify a particular sector in the disk is

Options

1. 22
2. 20
3. 18
4. 19

Question Type : **MCQ**
Question ID : **91394310762**
Option 1 ID : **91394342272**
Option 2 ID : **91394342271**
Option 3 ID : **91394342269**
Option 4 ID : **91394342270**
Status : **Answered**
Chosen Option : **2**

Q.42

Consider the following statements :

S1 A heuristic is admissible if it never overestimates the cost to reach the goal.

S2 A heuristic is monotonous if it follows triangle inequality property.

Which one of the following is *true* referencing the above statements ?

Choose the correct answer from the code given below :

Code :

Options

1. Statement S1 is true but statement S2 is false.
2. Neither of the statements S1 and S2 are true.
3. Both the statements S1 and S2 are true.
4. Statement S1 is false but statement S2 is true.

Question Type : **MCQ**
Question ID : **91394310839**
Option 1 ID : **91394342579**
Option 2 ID : **91394342577**
Option 3 ID : **91394342580**
Option 4 ID : **91394342578**
Status : **Answered**
Chosen Option : **2**

Q.43 The grammar $S \rightarrow (S) \mid SS \mid \varepsilon$ is ***not*** suitable for predictive parsing because the grammar is

Options

1. Left recursive
2. Ambiguous
3. Right recursive
4. An operator grammar

Question Type : **MCQ**
Question ID : **91394310784**
Option 1 ID : **91394342358**
Option 2 ID : **91394342359**
Option 3 ID : **91394342357**
Option 4 ID : **91394342360**
Status : **Answered**
Chosen Option : **4**

Q.44 Consider the following two languages :

L_1 = {x | for some y with $|y| = 2^{|x|}$, xy ∈ L and L is regular language}

L_2 = {x | for some y such that $|x| = |y|$, xy ∈ L and L is regular language}

Which one of the following is correct ?

Code :

Options

1. Both L_1 and L_2 are not regular languages

2. Both L_1 and L_2 are regular languages

3. Only L_1 is regular language

4. Only L_2 is regular language

Question Type : **MCQ**
Question ID : **91394310778**
Option 1 ID : **91394342336**
Option 2 ID : **91394342335**
Option 3 ID : **91394342333**
Option 4 ID : **91394342334**
Status : **Answered**
Chosen Option : **1**

Q.45 Consider the following statements :

(i) Auto increment addressing mode is useful in creating self-relocating code.

(ii) If auto increment addressing mode is included in an instruction set architecture, then an additional ALU is required for effective address calculation.

(iii) In auto increment addressing mode, the amount of increment depends on the size of the data item accessed.

Which of the above statements is/are true ?

Choose the correct answer from the code given below :

Code :

Options

1. (ii) and (iii) only

2. (iii) only

3. (ii) only

4. (i) and (ii) only

Question Type : **MCQ**
Question ID : **91394310757**
Option 1 ID : **91394342250**
Option 2 ID : **91394342251**
Option 3 ID : **91394342252**
Option 4 ID : **91394342249**
Status : **Answered**
Chosen Option : **2**

Q.46 Consider a vocabulary with only four propositions A, B, C and D. How many models are there for the following sentence ?

$$\neg A \vee \neg B \vee \neg C \vee \neg D$$

Options

1. 8

2. 16

3. 15

4. 7

Question Type : **MCQ**

Question ID : **91394310842**
Option 1 ID : **91394342590**
Option 2 ID : **91394342592**
Option 3 ID : **91394342591**
Option 4 ID : **91394342589**
Status : **Answered**
Chosen Option : **1**

Q.47 Consider the following statements related to AND-OR Search algorithm.

S1 A solution is a subtree that has a goal node at every leaf.

S2 OR nodes are analogous to the branching in a deterministic environment.

S3 AND nodes are analogous to the branching in a non-deterministic environment.

Which one of the following is true referencing the above statements ?

Choose the correct answer from the code given below :

Code :

Options

1. S1 – True, S2 – True, S3 – True
2. S1 – False, S2 – True, S3 – True
3. S1 – False, S2 – True, S3 – False
4. S1 – True, S2 – True, S3 – False

Question Type : **MCQ**
Question ID : **91394310840**
Option 1 ID : **91394342583**
Option 2 ID : **91394342581**
Option 3 ID : **91394342584**
Option 4 ID : **91394342582**
Status : **Answered**
Chosen Option : **2**

Q.48 Consider ISO-OSI network architecture reference model. Session layer of this model offers dialog control, token management and _____ as services.

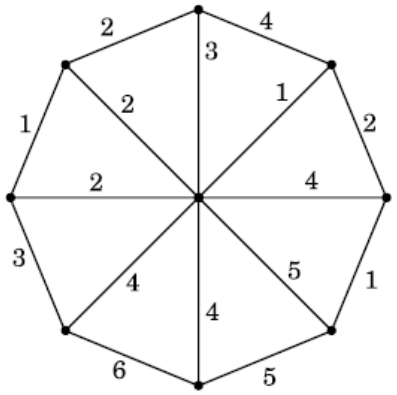
Options

1. Syncronization
2. Flow Control
3. Errors
4. Asyncronization

Question Type : **MCQ**
Question ID : **91394310807**
Option 1 ID : **91394342449**
Option 2 ID : **91394342451**
Option 3 ID : **91394342452**
Option 4 ID : **91394342450**
Status : **Answered**
Chosen Option : **2**

Q.49

Consider the graph shown below :



Use Kruskal's algorithm to find the minimum spanning tree of the graph.
The weight of this minimum spanning tree is

Options
1. 16
2. 17
3. 13
4. 14

Question Type : **MCQ**
Question ID : **91394310756**
Option 1 ID : **91394342247**
Option 2 ID : **91394342245**
Option 3 ID : **91394342248**
Option 4 ID : **91394342246**
Status : **Answered**
Chosen Option : **1**

Q.50 In 3D Graphics, which of the following statements is/are true ?

P : Back-face culling is an example of an image-precision visible-surface determination procedure.

Q : Z-buffer is a 16-bit, 32-bit, or 64-bit field associated with each pixel in a frame buffer that can be used to determine the visible surfaces at each pixel.

Choose the correct answer from the code given below :

Code :

Options
1. Q only
2. P and Q
3. P only
4. Neither P nor Q

Question Type : **MCQ**
Question ID : **91394310789**
Option 1 ID : **91394342378**
Option 2 ID : **91394342379**
Option 3 ID : **91394342377**
Option 4 ID : **91394342380**
Status : **Answered**

Chosen Option : **2**

Q.51 Consider the following recursive Java function f that takes two long arguments and returns a float value :

```
public static float f(long m, long n)
{
    float result = (float) m / (float) n;
    if (m < 0 || n < 0)
            return 0·0f;
    else
            result += f(m*2, n*3);
    return result;
}
```

Which of the following integers best approximates the value of f(2, 3) ?

Options

1. **1**
2. **2**
3. **0**
4. **3**

Question Type : **MCQ**
Question ID : **91394310792**
Option 1 ID : **91394342390**
Option 2 ID : **91394342391**
Option 3 ID : **91394342389**
Option 4 ID : **91394342392**
Status : **Answered**
Chosen Option : **3**

Q.52 The solution of recurrence relation :

$T(n) = 2\ T(\text{sqrt}(n)) + \lg(n)$

is

Options

1. $O(\lg(n)\ \lg(\lg(n)))$
2. $O(\lg(n)\ \lg(n))$
3. $O(n \lg(n))$
4. $O(\lg(n))$

Question Type : **MCQ**
Question ID : **91394310765**
Option 1 ID : **91394342284**
Option 2 ID : **91394342283**
Option 3 ID : **91394342282**
Option 4 ID : **91394342281**
Status : **Answered**
Chosen Option : **3**

Q.53 The boolean expression $\overline{A} \cdot B + A \cdot \overline{B} + A \cdot B$ is equivalent to

Options

1. A.B
2. $\overline{A} \cdot B$
3. $A + B$
4. $\overline{A + B}$

Question Type : **MCQ**
Question ID : **91394310751**
Option 1 ID : **91394342227**
Option 2 ID : **91394342225**
Option 3 ID : **91394342228**
Option 4 ID : **91394342226**
Status : **Answered**
Chosen Option : **3**

Q.54 A clustering index is defined on the fields which are of type

Options

1. non-key and ordering
2. key and ordering
3. key and non-ordering
4. non-key and non-ordering

Question Type : **MCQ**
Question ID : **91394310829**
Option 1 ID : **91394342537**
Option 2 ID : **91394342539**
Option 3 ID : **91394342540**
Option 4 ID : **91394342538**
Status : **Answered**
Chosen Option : **3**

Q.55 _____ system call creates new process in Unix.

Options

1. create
2. fork new
3. create new
4. fork

Question Type : **MCQ**
Question ID : **91394310820**
Option 1 ID : **91394342501**
Option 2 ID : **91394342504**
Option 3 ID : **91394342502**
Option 4 ID : **91394342503**
Status : **Answered**

Chosen Option : **4**

Q.56

Software coupling involves dependencies among pieces of software called modules. Which of the following are correct statements with respect to module coupling ?

P : Common coupling occurs when two modules share the same global data.

Q : Control coupling occurs when modules share a composite data structure and use only parts of it.

R : Content coupling occurs when one module modifies or relies on the internal working of another module.

Choose the correct answer from the code given below :

Code :

Options

1. P and Q only
2. Q and R only
3. All of P, Q and R
4. P and R only

Question Type : **MCQ**
Question ID : **91394310804**
Option 1 ID : **91394342437**
Option 2 ID : **91394342439**
Option 3 ID : **91394342440**
Option 4 ID : **91394342438**
Status : **Answered**
Chosen Option : **4**

Q.57

Suppose a system has 12 instances of some resource with n processes competing for that resource. Each process may require 4 instances of the resource. The maximum value of n for which the system never enters into deadlock is

Options

1. 4
2. 3
3. 5
4. 6

Question Type : **MCQ**
Question ID : **91394310814**
Option 1 ID : **91394342478**
Option 2 ID : **91394342477**
Option 3 ID : **91394342479**
Option 4 ID : **91394342480**
Status : **Answered**
Chosen Option : **2**

Q.58

Consider the following grammar G :

$S \rightarrow A \mid B$

$A \rightarrow a \mid c$

$B \rightarrow b \mid c$

where {S, A, B} is the set of non-terminals, {a, b, c} is the set of terminals.

Which of the following statement(s) is/are correct ?

S_1 : LR(1) can parse all strings that are generated using grammar G.

S_2 : LL(1) can parse all strings that are generated using grammar G.

Choose the correct answer from the code given below :

Code :

Options

1. Neither S_1 nor S_2
2. Only S_1
3. Only S_2
4. Both S_1 and S_2

Question Type : **MCQ**
Question ID : **91394310783**
Option 1 ID : **91394342356**
Option 2 ID : **91394342353**
Option 3 ID : **91394342354**
Option 4 ID : **91394342355**
Status : **Answered**
Chosen Option : **1**

Q.59 The Software Requirement Specification (SRS) is said to be _____ if and only if no subset of individual requirements described in it conflict with each other.

Options

1. Correct
2. Unambiguous
3. Consistent
4. Verifiable

Question Type : **MCQ**
Question ID : **91394310796**
Option 1 ID : **91394342405**
Option 2 ID : **91394342407**
Option 3 ID : **91394342406**
Option 4 ID : **91394342408**
Status : **Answered**
Chosen Option : **2**

Q.60 Software products need perfective maintenance for which of the following reasons ?

Options

1. To rectify bugs observed while the system is in use.

2. To support the new features that users want it to support.

3. To overcome wear and tear caused by the repeated use of the software.

4. When the customers need the product to run on new platforms.

Question Type : **MCQ**
Question ID : **91394310797**
Option 1 ID : **91394342409**
Option 2 ID : **91394342411**
Option 3 ID : **91394342412**
Option 4 ID : **91394342410**
Status : **Answered**
Chosen Option : **2**

Q.61

In mathematical logic, which of the following are statements ?

(i) There will be snow in January.

(ii) What is the time now ?

(iii) Today is Sunday.

(iv) You must study Discrete Mathematics.

Choose the correct answer from the code given below :

Code :

Options

1. (i) and (iii)

2. (i) and (ii)

3. (ii) and (iv)

4. (iii) and (iv)

Question Type : **MCQ**
Question ID : **91394310745**
Option 1 ID : **91394342201**
Option 2 ID : **91394342202**
Option 3 ID : **91394342203**
Option 4 ID : **91394342204**
Status : **Answered**
Chosen Option : **1**

Q.62

Which of the following statement/s is/are *true* ?

(i) Firewalls can screen traffic going into or out of an organization.

(ii) Virtual private networks can simulate an old leased network to provide certain desirable properties.

Choose the correct answer from the code given below :

Code :

Options

1. (ii) only

2. Neither (i) nor (ii)

3. (i) only

4. Both (i) and (ii)

Question Type : **MCQ**
Question ID : **91394310810**
Option 1 ID : **91394342462**
Option 2 ID : **91394342464**
Option 3 ID : **91394342461**
Option 4 ID : **91394342463**
Status : **Answered**
Chosen Option : **2**

Q.63 The Third Generation mobile phones are digital and based on

Options

1. AMPS

2. CDMA

3. D-AMPS

4. Broadband CDMA

Question Type : **MCQ**
Question ID : **91394310809**
Option 1 ID : **91394342457**
Option 2 ID : **91394342459**
Option 3 ID : **91394342458**
Option 4 ID : **91394342460**
Status : **Answered**
Chosen Option : **2**

Q.64 Consider the following set of processes and the length of CPU burst time given in milliseconds :

Process	CPU Burst time (ms)
P_1	5
P_2	7
P_3	6
P_4	4

Assume that processes being scheduled with Round-Robin Scheduling Algorithm with time quantum 4 ms. Then the waiting time for P_4 is _____ ms.

Options

1. 12

2. 4

3. 6

4. 0

Question Type : **MCQ**
Question ID : **91394310817**
Option 1 ID : **91394342491**
Option 2 ID : **91394342490**
Option 3 ID : **91394342492**
Option 4 ID : **91394342489**
Status : **Answered**
Chosen Option : **1**

Q.65 Consider the following sequence of two transactions on a bank account (A) with initial balance 20,000 that transfers 5,000 to another account (B) and then apply 10% interest.

(i) T1 start

(ii) T1 A old = 20,000 new 15,000

(iii) T1 B old = 12,000 new = 17,000

(iv) T1 commit

(v) T2 start

(vi) T2 A old = 15,000 new = 16,500

(vii) T2 commit

Suppose the database system crashes just before log record (vii) is written. When the system is restarted, which one statement is true of the recovery process ?

Options 1.

We need not redo log records (ii) and (iii) because transaction T1 has committed.

2.

We must redo log record (vi) to set A to 16,500 and then redo log records (ii) and (iii).

3.

We can apply redo and undo operations in arbitrary order because they are idempotent.

4. We must redo log record (vi) to set A to 16,500.

Question Type : **MCQ**
Question ID : **91394310827**
Option 1 ID : **91394342531**
Option 2 ID : **91394342530**
Option 3 ID : **91394342532**
Option 4 ID : **91394342529**
Status : **Answered**
Chosen Option : **4**

Q.66 Which of the following statements are true ?

(i) Every logic network is equivalent to one using just NAND gates or just NOR gates.

(ii) Boolean expressions and logic networks correspond to labelled acyclic digraphs.

(iii) No two Boolean algebras with n atoms are isomorphic.

(iv) Non-zero elements of finite Boolean algebras are not uniquely expressible as joins of atoms.

Choose the correct answer from the code given below :

Code :

Options 1. (i) and (ii) only

2. (ii), (iii) and (iv) only

3. (i), (ii) and (iii) only

4. (i) and (iv) only

Question Type : **MCQ**
Question ID : **91394310749**
Option 1 ID : **91394342219**
Option 2 ID : **91394342220**
Option 3 ID : **91394342218**
Option 4 ID : **91394342217**
Status : **Answered**
Chosen Option : **2**

Q.67 Which of the following statement/s is/are true ?

(i) Facebook has the world's largest Hadoop Cluster.

(ii) Hadoop 2·0 allows live stream processing of Real time data.

Choose the correct answer from the code given below :

Code :

Options

1. (ii) only

2. (i) only

3. Neither (i) nor (ii)

4. Both (i) and (ii)

Question Type : **MCQ**
Question ID : **91394310824**
Option 1 ID : **91394342518**
Option 2 ID : **91394342517**
Option 3 ID : **91394342520**
Option 4 ID : **91394342519**
Status : **Answered**
Chosen Option : **3**

Q.68 Consider the following pseudo-code fragment, where m is a non-negative integer that has been initialized :

```
p = 0;
k = 0;
while (k < m)
    p = p + 2^k;
    k = k + 1;
end while
```

Which of the following is a loop invariant for the while statement ?
(Note : a loop invariant for a while statement is an assertion that is true each time the guard is evaluated during the execution of the while statement).

Options

1. $p = 2^{k+1} - 1$ and $0 \le k \le m$
2. $p = 2^{k+1} - 1$ and $0 \le k < m$
3. $p = 2^{k} - 1$ and $0 \le k \le m$
4. $p = 2^{k} - 1$ and $0 \le k < m$

Question Type : **MCQ**
Question ID : **91394310790**
Option 1 ID : **91394342384**
Option 2 ID : **91394342382**
Option 3 ID : **91394342383**
Option 4 ID : **91394342381**
Status : **Answered**
Chosen Option : **2**

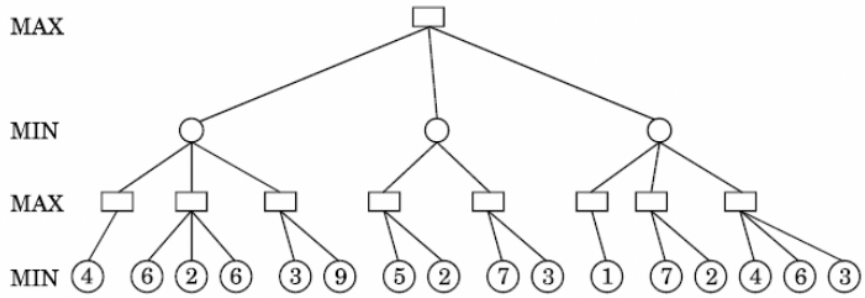
Q.69 A host is connected to a department network which is part of a university network. The university network, in turn, is part of the Internet. The largest network, in which the Ethernet address of the host is unique, is

Options

1. the Internet
2. the subnet to which the host belongs
3. the university network
4. the department network

Question Type : **MCQ**
Question ID : **91394310830**
Option 1 ID : **91394342541**
Option 2 ID : **91394342544**
Option 3 ID : **91394342542**
Option 4 ID : **91394342543**
Status : **Answered**
Chosen Option : **3**

Q.70 Consider the following minimax game tree search



What will be the value propagated at the root ?

Options

1. 3
2. 6

3. 4

4. 5

Question Type : **MCQ**
Question ID : **91394310841**
Option 1 ID : **91394342585**
Option 2 ID : **91394342588**
Option 3 ID : **91394342586**
Option 4 ID : **91394342587**
Status : **Answered**
Chosen Option : **3**

Q.71 The elements 42, 25, 30, 40, 22, 35, 26 are inserted one by one in the given order into a max-heap. The resultant max-heap is stored in an array implementation as

Options

1. <42, 40, 35, 25, 22, 26, 30>

2. <42, 35, 40, 22, 25, 26, 30>

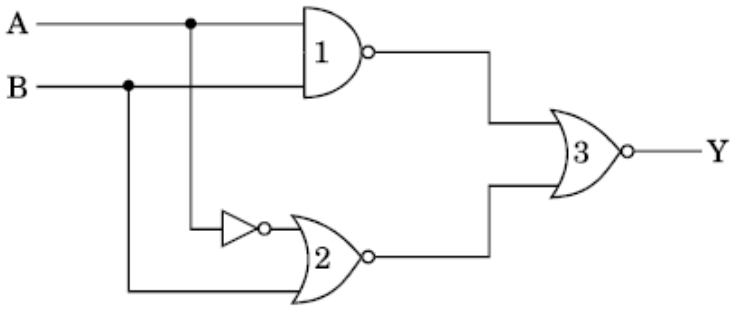
3. <42, 35, 40, 22, 25, 30, 26>

4. <42, 40, 35, 25, 22, 30, 26>

Question Type : **MCQ**
Question ID : **91394310766**
Option 1 ID : **91394342287**
Option 2 ID : **91394342288**
Option 3 ID : **91394342286**
Option 4 ID : **91394342285**
Status : **Answered**
Chosen Option : **2**

Q.72 Find the boolean expression for the logic circuit shown below :

(1-NAND gate, 2-NOR gate, 3-NOR gate)



Options

1. $\overline{A}\,\overline{B}$

2. $A\overline{B}$

3. $\overline{A}\,B$

4. AB

Question Type : **MCQ**

Question ID : **91394310761**
Option 1 ID : **91394342268**
Option 2 ID : **91394342265**
Option 3 ID : **91394342266**
Option 4 ID : **91394342267**
Status : **Answered**
Chosen Option : **4**

Q.73 Consider the midpoint (or Bresenham) algorithm for rasterizing lines given below :

```
(1)   Input (x1, y1) and (x2, y2)
(2)   y = y1
(3)   d = f(x1 + 1, y1 + 1/2) //f is the implicit form of a line
(4)   for x = x1 to x2
(5)   do
(6)      plot(x, y)
(7)      if(d < 0)
(8)      then
(9)         y = y + 1
(10)        d = d + (y1 – y2) + (x2 –x1)
(11)     else
(12)        d = d + (y1 – y2)
(13)     end
(14)  end
```

Which statements are true ?

P : For a line with slope m > 1, we should change the outer loop in line (4) to be over y.

Q : Lines (10) and (12) update the decision variable d through an incremental evaluation of the line equation f.

R : The algorithm fails if d is ever 0.

Choose the correct answer from the code given below :

Code :

Options

1. **P only**
2. **Q and R only**
3. **P and Q only**
4. **P, Q and R**

Question Type : **MCQ**
Question ID : **91394310787**
Option 1 ID : **91394342369**
Option 2 ID : **91394342371**
Option 3 ID : **91394342370**
Option 4 ID : **91394342372**
Status : **Answered**
Chosen Option : **2**

Q.74 Suppose that everyone in a group of N people wants to communicate secretly with (N – 1) other people using symmetric key cryptographic system. The communication between any two persons should not be decodable by the others in the group. The number of keys required in the system as a whole to satisfy the confidentiality requirement is

Options

1. $N(N-1)$
2. $(N-1)^2$
3. $2N$
4. $N(N-1)/2$

Question Type : **MCQ**
Question ID : **91394310834**
Option 1 ID : **91394342557**
Option 2 ID : **91394342560**
Option 3 ID : **91394342559**
Option 4 ID : **91394342558**
Status : **Answered**
Chosen Option : **2**

Q.75 An attribute A of datatype varchar(20) has the value 'xyz', and the attribute B of datatype char(20) has the value "lmnop", then the attribute A has _____ spaces and attribute B has _____ spaces.

Options

1. 20, 5
2. 3, 20
3. 20, 20
4. 3, 5

Question Type : **MCQ**
Question ID : **91394310821**
Option 1 ID : **91394342508**
Option 2 ID : **91394342507**
Option 3 ID : **91394342506**
Option 4 ID : **91394342505**
Status : **Answered**
Chosen Option : **3**

Q.76 Consider the C/C++ function f() given below :

```
void f(char w[])
{
    int x = strlen(w);  //length of a string
    char c;
    for (int i = 0;  i < x; i++)
    {
        c = w[i];
        w[i] = w[x–i–1];
        w[x–i–1) = c;
    }
}
```

Which of the following is the purpose of f( ) ?

Options 1.

It outputs the contents of the array with the characters rearranged so they are no longer recognized as the words in the original phrase.

2. It outputs the contents of the array in reverse order.

3. It outputs the contents of the array in the original order.

4. It outputs the contents of the array with the characters shifted over by one position.

Question Type : **MCQ**
Question ID : **91394310795**
Option 1 ID : **91394342404**
Option 2 ID : **91394342401**
Option 3 ID : **91394342402**
Option 4 ID : **91394342403**
Status : **Answered**
Chosen Option : **2**

Q.77

The relation ≤ and < on a boolean algebra are defined as :

$x \leq y$ if and only if $x \vee y = y$

$x < y$ means $x \leq y$ but $x \neq y$

$x \geq y$ means $y \leq x$ and

$x > y$ means $y < x$

Considering the above definitions, which of the following is ***not*** true in the boolean algebra ?

(i) If $x \leq y$ and $y \leq z$, then $x \leq z$

(ii) If $x \leq y$ and $y \leq x$, then $x = y$

(iii) If $x < y$ and $y < z$, then $x \leq y$

(iv) If $x < y$ and $y < z$, then $x < y$

Choose the correct answer from the code given below :

Code :

Options

1. **(iv) only**

2. **(iii) only**

3. **(i) and (ii) only**

4. **(ii) and (iii) only**

Question Type : **MCQ**
Question ID : **91394310750**
Option 1 ID : **91394342224**
Option 2 ID : **91394342223**
Option 3 ID : **91394342221**
Option 4 ID : **91394342222**
Status : **Answered**
Chosen Option : **2**

Q.78

In K-coloring of an undirected graph G = (V, E) is a function

$c : V \rightarrow \{0, 1, ..., K - 1\}$ such that $c(u) \neq c(v)$ for every edge $(u, v) \in E$.

Which of the following is ***not*** correct ?

Options

1. G is bipartite
2. G is 2-colorable
3. G has cycles of odd length
4. G has no cycles of odd length

Question Type : **MCQ**
Question ID : **91394310772**
Option 1 ID : **91394342309**
Option 2 ID : **91394342310**
Option 3 ID : **91394342311**
Option 4 ID : **91394342312**
Status : **Answered**
Chosen Option : **1**

Q.79 Data warehouse contains _____ data that is never found in operational environment.

Options

1. Encoded
2. Encrypted
3. Scripted
4. Summary

Question Type : **MCQ**
Question ID : **91394310822**
Option 1 ID : **91394342510**
Option 2 ID : **91394342511**
Option 3 ID : **91394342512**
Option 4 ID : **91394342509**
Status : **Answered**
Chosen Option : **4**

Q.80 Consider the following terminology and match List I with List II and choose the correct answer from the code given below.

b = branching factor

d = depth of the shallowest solution

m = Maximum depth of the search tree

l = depth limit

List I (Algorithms)		List II (Space Complexity)
(a) BFS search	(i)	O(bd)
(b) DFS search	(ii)	$O(b^d)$
(c) Depth-limited search	(iii)	O(bm)
(d) Iterative deepening search	(iv)	O(bl)

Code :

Options

1. (a)–(ii), (b)–(iii), (c)–(iv), (d)–(i)
2. (a)–(i), (b)–(iii), (c)–(iv), (d)–(ii)
3. (a)–(i), (b)–(ii), (c)–(iv), (d)–(iii)
4. (a)–(iii), (b)–(ii), (c)–(iv), (d)–(i)

Question Type : **MCQ**
Question ID : **91394310837**
Option 1 ID : **91394342570**
Option 2 ID : **91394342572**
Option 3 ID : **91394342569**
Option 4 ID : **91394342571**
Status : **Answered**
Chosen Option : **2**

Q.81 A legacy software system has 940 modules. The latest release required that 90 of these modules be changed. In addition, 40 new modules were added and 12 old modules were removed. Compute the software maturity index for the system.

Options

1. 0·923
2. 0·849
3. 0·524
4. 0·725

Question Type : **MCQ**
Question ID : **91394310801**
Option 1 ID : **91394342428**
Option 2 ID : **91394342425**
Option 3 ID : **91394342426**
Option 4 ID : **91394342427**
Status : **Answered**
Chosen Option : **2**

Q.82 Match List I with List II and choose the correct answer from the code given below.

	List I (Graph Algorithm)		**List II (Time Complexity)**
(a)	Dijkstra's algorithm	(i)	O(E lg E)
(b)	Kruskal's algorithm	(ii)	$\Theta(V^3)$
(c)	Floyd-Warshall algorithm	(iii)	$O(V^2)$
(d)	Topological sorting	(iv)	$\Theta(V + E)$

where V and E are the number of vertices and edges in graph respectively.

Code :

Options

1. (a)–(iii), (b)–(i), (c)–(ii), (d)–(iv)
2. (a)–(i), (b)–(iii), (c)–(iv), (d)–(ii)

3. (a)–(i), (b)–(iii), (c)–(ii), (d)–(iv)

4. (a)–(iii), (b)–(i), (c)–(iv), (d)–(ii)

Question Type : **MCQ**
Question ID : **91394310771**
Option 1 ID : **91394342306**
Option 2 ID : **91394342307**
Option 3 ID : **91394342305**
Option 4 ID : **91394342308**
Status : **Answered**
Chosen Option : **2**

Q.83 What does the following Java function perform ? (Assume int occupies four bytes of storage)

```
public static int f(int a)
{   // Pre-conditions : a > 0 and no overflow/underflow occurs
    int b = 0;
    for (int i = 0;  i < 32;  i++)
    {
        b = b << 1;
        b = b | (a & 1);
        a = a >>> 1; // This is a logical shift
    }
    return b;
}
```

Options 1. Return the int that represents the number of 0's in the binary representation of integer a.

2. Returns the int that has the binary representation of integer a.

3. Return the int that has the reversed binary representation of integer a.

4. Return the int that represents the number of 1's in the binary representation of integer a.

Question Type : **MCQ**
Question ID : **91394310793**
Option 1 ID : **91394342396**
Option 2 ID : **91394342393**
Option 3 ID : **91394342394**
Option 4 ID : **91394342395**
Status : **Answered**
Chosen Option : **2**

Q.84 Consider two sequences X and Y :

X = <0, 1, 2, 1, 3, 0, 1>

Y = <1, 3, 2, 0, 1, 0>

The length of longest common subsequence between X and Y is

Options 1. 5

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **91394310767**
Option 1 ID : **91394342292**
Option 2 ID : **91394342289**
Option 3 ID : **91394342290**
Option 4 ID : **91394342291**
Status : **Answered**
Chosen Option : **4**

Q.85 The second smallest of n elements can be found with _____ comparisons in the worst case.

Options

1. $n + \text{ceil}(\lg n) - 2$

2. $\lg n$

3. $\frac{3n}{2}$

4. $n - 1$

Question Type : **MCQ**
Question ID : **91394310774**
Option 1 ID : **91394342319**
Option 2 ID : **91394342318**
Option 3 ID : **91394342320**
Option 4 ID : **91394342317**
Status : **Answered**
Chosen Option : **1**

Q.86 Consider the following x86 – assembly language instructions :

MOV AL, 153
NEG AL

The contents of the destination register AL (in 8-bit binary notation), the status of Carry Flag (CF) and Sign Flag (SF) after the execution of above instructions, are

Options

1. AL = 0110 0111; CF = 0; SF = 1

2. AL = 0110 0110; CF = 1; SF = 1

3. AL = 0110 0110; CF = 0; SF = 0

4. AL = 0110 0111; CF = 1; SF = 0

Question Type : **MCQ**
Question ID : **91394310759**
Option 1 ID : **91394342258**
Option 2 ID : **91394342259**
Option 3 ID : **91394342257**

Option 4 ID : **91394342260**
Status : **Answered**
Chosen Option : **2**

Q.87 A box contains six red balls and four green balls. Four balls are selected at random from the box. What is the probability that two of the selected balls will be red and two will be green ?

Options

1. $\frac{1}{35}$
2. $\frac{1}{9}$
3. $\frac{1}{14}$
4. $\frac{3}{7}$

Question Type : **MCQ**
Question ID : **91394310747**
Option 1 ID : **91394342211**
Option 2 ID : **91394342212**
Option 3 ID : **91394342209**
Option 4 ID : **91394342210**
Status : **Answered**
Chosen Option : **2**

Q.88 Let r = a(a + b)*, s = aa*b and t = a*b be three regular expressions.
Consider the following :

(i) $L(s) \subseteq L(r)$ and $L(s) \subseteq L(t)$

(ii) $L(r) \subseteq L(s)$ and $L(s) \subseteq L(t)$

Choose the correct answer from the code given below :

Code :

Options

1. **Both (i) and (ii) are correct.**
2. **Only (ii) is correct.**
3. **Only (i) is correct.**
4. **Neither (i) nor (ii) is correct.**

Question Type : **MCQ**
Question ID : **91394310775**
Option 1 ID : **91394342323**
Option 2 ID : **91394342322**
Option 3 ID : **91394342321**
Option 4 ID : **91394342324**
Status : **Answered**
Chosen Option : **2**

Q.89

A binary search tree is constructed by inserting the following numbers in order :

60, 25, 72, 15, 30, 68, 101, 13, 18, 47, 70, 34

The number of nodes is the left subtree is

Options

1. 6
2. 3
3. 5
4. 7

Question Type : **MCQ**
Question ID : **91394310769**
Option 1 ID : **91394342298**
Option 2 ID : **91394342300**
Option 3 ID : **91394342297**
Option 4 ID : **91394342299**
Status : **Answered**
Chosen Option : **4**

Q.90

To overcome difficulties in Readers–Writers problem, which of the following statement/s is/are *true* ?

(i) Writers are given exclusive access to shared objects.

(ii) Readers are given exclusive access to shared objects.

(iii) Both Readers and Writers are given exclusive access to shared objects.

Choose the correct answer from the code given below :

Code :

Options

1. Both (ii) and (iii)
2. (ii) only
3. (i) only
4. (iii) only

Question Type : **MCQ**
Question ID : **91394310813**
Option 1 ID : **91394342476**
Option 2 ID : **91394342474**
Option 3 ID : **91394342473**
Option 4 ID : **91394342475**
Status : **Answered**
Chosen Option : **3**

Q.91

Match each UML diagram in List I to its appropriate description in List II.

	List I		List II
(a)	State Diagram	(i)	Describes how the external entities (people, devices) can interact with the system.
(b)	Use-Case Diagram	(ii)	Used to describe the static or structural view of a system.
(c)	Class Diagram	(iii)	Used to show the flow of a business process, the steps of a use-case or the logic of an object behaviour.
(d)	Activity Diagram	(iv)	Used to describe the dynamic behaviour of objects and could also be used to describe the entire system behaviour.

Code :

Options

1. (a)–(i), (b)–(iv), (c)–(iii), (d)–(ii)
2. (a)–(iv), (b)–(ii), (c)–(i), (d)–(iii)
3. (a)–(i), (b)–(iv), (c)–(ii), (d)–(iii)
4. (a)–(iv), (b)–(i), (c)–(ii), (d)–(iii)

Question Type : **MCQ**
Question ID : **91394310798**
Option 1 ID : **91394342415**
Option 2 ID : **91394342414**
Option 3 ID : **91394342413**
Option 4 ID : **91394342416**
Status : **Answered**
Chosen Option : **2**

Q.92 The decimal floating point number –40.1 represented using IEEE–754 32-bit representation and written in hexadecimal form is

Options

1. 0xC2206000
2. 0xC2006000
3. 0xC2006666
4. 0xC2206666

Question Type : **MCQ**
Question ID : **91394310760**
Option 1 ID : **91394342262**
Option 2 ID : **91394342264**
Option 3 ID : **91394342263**
Option 4 ID : **91394342261**
Status : **Answered**
Chosen Option : **2**

Q.93 In a ternary tree, the number of internal nodes of degree 1, 2, and 3 is 4, 3, and 3 respectively. The number of leaf nodes in the ternary tree is

Options

1. 9
2. 12
3. 10

4. **11**

Question Type : **MCQ**
Question ID : **91394310770**
Option 1 ID : **91394342301**
Option 2 ID : **91394342304**
Option 3 ID : **91394342302**
Option 4 ID : **91394342303**
Status : **Answered**
Chosen Option : **3**

Q.94 Consider the following tables (relations) :

Students

Roll-No	Name
18CS101	Ramesh
18CS102	Mukesh
18CS103	Ramesh

Performance

Roll-No	Course	Marks
18CS101	DBMS	60
18CS101	Compiler Design	65
18CS102	DBMS	80
18CS103	DBMS	85
18CS102	Compiler Design	75
18CS103	Operating System	70

Primary keys in the tables are shown using underline. Now, consider the following query :

```
SELECT S.Name, Sum (P.Marks)
FROM Students S, Performance P
WHERE S.Roll-No = P.Roll-No
GROUP BY S.Name
```

The number of rows returned by above query is

Options

1. **0**
2. **3**
3. **1**
4. **2**

Question Type : **MCQ**
Question ID : **91394310828**
Option 1 ID : **91394342533**
Option 2 ID : **91394342536**
Option 3 ID : **91394342534**
Option 4 ID : **91394342535**
Status : **Answered**
Chosen Option : **3**

Q.95 Which of the following problems is decidable for recursive languages (L) ?

Options

1. Is $L = \phi$?
2. Is $L = \Sigma^*$?
3. Is L = R, where R is a given regular set ?
4. Is $w \in L$, where w is a string ?

Question Type : **MCQ**
Question ID : **91394310782**
Option 1 ID : **91394342349**
Option 2 ID : **91394342351**
Option 3 ID : **91394342352**
Option 4 ID : **91394342350**
Status : **Answered**
Chosen Option : **2**

Q.96 Consider a singly linked list. What is the worst case time complexity of the best-known algorithm to delete the node a, pointer to this node is q, from the list ?

Options

1. O(lg n)
2. O(n)
3. O(1)
4. O(n lg n)

Question Type : **MCQ**
Question ID : **91394310773**
Option 1 ID : **91394342315**
Option 2 ID : **91394342314**
Option 3 ID : **91394342316**
Option 4 ID : **91394342313**
Status : **Answered**
Chosen Option : **2**

Q.97 Which of the following statement/s is/are *true* ?

(i) Windows XP supports both peer-peer and client-server networks.

(ii) Windows XP implements Transport protocols as drivers that can be loaded and unloaded from the system dynamically.

Choose the correct answer from the code given below :

Code :

Options

1. Both (i) and (ii)
2. (ii) only
3. (i) only
4. Neither (i) nor (ii)

Question Type : **MCQ**

Question ID : **91394310811**
Option 1 ID : **91394342468**
Option 2 ID : **91394342466**
Option 3 ID : **91394342465**
Option 4 ID : **91394342467**
Status : **Answered**
Chosen Option : **2**

Q.98 Consider a relation schema R = (A, B, C, D, E, F) on which the following functional dependencies hold :

$A \rightarrow B$

$B, C \rightarrow D$

$E \rightarrow C$

$D \rightarrow A$

What are the candidate keys of R ?

Options

1. AEF, BEF and BCF
2. AEF, BEF and DEF
3. AE, BE and DE
4. AE and BE

Question Type : **MCQ**
Question ID : **91394310826**
Option 1 ID : **91394342527**
Option 2 ID : **91394342528**
Option 3 ID : **91394342526**
Option 4 ID : **91394342525**
Status : **Answered**
Chosen Option : **2**

Q.99 The four byte IP Address consists of

Options

1. Network Address
2. Neither Network nor Host Address
3. Host Address
4. Both Network and Host Addresses

Question Type : **MCQ**
Question ID : **91394310806**
Option 1 ID : **91394342445**
Option 2 ID : **91394342448**
Option 3 ID : **91394342446**
Option 4 ID : **91394342447**
Status : **Answered**
Chosen Option : **4**

Q.100

Consider the following two C++ programs P1 and P2 and two statements S1 and S2 about these programs :

P1	P2

void f (int a, int *b, int &c)
{ a = 1;
*b = 2;
c = 3;
}
int main()
{ int i = 0;
f(i, &i, i);
cout << i;
}
	double a = 1, b = 2;
	double &f(double &d)
	{ d = 4;
	return b;
	}
	int main()
	{
	f(a) = 5;
	cout << a << ":" << b;
	}

S1 : P1 prints out 3

S2 : P2 prints out 4 : 2

What can you say about the statements S1 and S2 ?

Code :

Options

1. **Neither S1 nor S2 is true.**
2. **Only S2 is true.**
3. **Both S1 and S2 are true.**
4. **Only S1 is true.**

Question Type : **MCQ**
Question ID : **91394310791**
Option 1 ID : **91394342388**
Option 2 ID : **91394342386**
Option 3 ID : **91394342387**
Option 4 ID : **91394342385**
Status : **Answered**
Chosen Option : **2**