UGC NET 2019

Test Time	9:30 AM - 12:30 PM
Test Date	04/12/2019
Subject	87 Computer Science and Applications

Section : **PART I General Paper**

Q.1 Which of the following is converse of 'Some S is P'?

(1) Some S is not P (2) Some P is not S
(3) Some P is S (4) No P is S

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510461**
Option 1 ID : **61547540789**
Option 2 ID : **61547540790**
Option 3 ID : **61547540791**
Option 4 ID : **61547540792**
Status : **Answered**
Chosen Option : **3**

Q.2 Which of the learning outcomes are intended in teaching organized at understanding level?

(1) Longer recall and retention of facts
(2) Seeking of relationships and patterns among facts
(3) Creative construction and critical interpretation of ideas
(4) Mastery of facts and information

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510439**
Option 1 ID : **61547540701**
Option 2 ID : **61547540702**
Option 3 ID : **61547540703**
Option 4 ID : **61547540704**
Status : **Answered**
Chosen Option : **3**

Q.3

Which of the following are classroom related factors that influence effectiveness of teaching?

(a) Prior task related behaviour of students

(b) Adherence to linear pattern of communication by the teacher

(c) Socio-economic status of the family to which learners belong

(d) Inappropriate use of technological resources by the teacher

(e) Cultural background of students

Choose your answer from the following options :

(1) (a), (b) and (c)

(2) (b), (c) and (d)

(3) (a), (b) and (d)

(4) (c), (d) and (e)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510441**
Option 1 ID : **61547540709**
Option 2 ID : **61547540710**
Option 3 ID : **61547540711**
Option 4 ID : **61547540712**
Status : **Answered**
Chosen Option : **1**

Q.4 Which one of the following fallacious hetu (middle term) is not uniformly concomitant with the major term?

(1) Asatpratipaksa (2) Auyatireki

(3) Anyonya-Asiddha (4) Suyābhicāra

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510462**
Option 1 ID : **61547540793**
Option 2 ID : **61547540794**
Option 3 ID : **61547540795**
Option 4 ID : **61547540796**
Status : **Answered**
Chosen Option : **4**

Q.5 In a certain coding language, 'AEIOU' is written as 'TNHDZ'. Using the same coding language, 'BFJPV' will be written as

(1) UOIEA (2) AEIOU

(3) CGKQW (4) WQKGC

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510454**
Option 1 ID : **61547540761**
Option 2 ID : **61547540762**
Option 3 ID : **61547540763**
Option 4 ID : **61547540764**

Status : **Answered**
Chosen Option : **3**

Q.6 A research scholar while submitting his/her thesis, did not acknowledge in the preface the help and support of the respondents of questionnaires used. This will be called an instance of

(1) Technical lapse (2) Wilful negligence
(3) Unethical act (4) Lack of respect

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510448**
Option 1 ID : **61547540737**
Option 2 ID : **61547540738**
Option 3 ID : **61547540739**
Option 4 ID : **61547540740**
Status : **Answered**
Chosen Option : **2**

Q.7 If 3% of $(a+b)$ = 7% of (ab)

and 5% of $(a-b)$ = 4% of (ab),

then what percentage of b is a?

(1) $\frac{47}{23}\%$ (2) $\frac{23}{47}\%$
(3) $\frac{4700}{23}\%$ (4) $\frac{2300}{47}\%$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510455**
Option 1 ID : **61547540765**
Option 2 ID : **61547540766**
Option 3 ID : **61547540767**
Option 4 ID : **61547540768**
Status : **Answered**
Chosen Option : **1**

Q.8 A certain principal invested at compound interest payable yearly amounts to Rs. 10816.00 in 3 years and Rs. 11248.64 in 4 years. What is the rate of interest?

(1) 3% (2) 4%
(3) 4.5% (4) 5.5%

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510457**
Option 1 ID : **61547540773**
Option 2 ID : **61547540774**
Option 3 ID : **61547540775**

Option 4 ID : **61547540776**
Status : **Answered**
Chosen Option : **2**

Q.9 Given below are two Statements – One is labelled as Assertion (A) and other is labelled as Reason (R) :

Assertion (A) : Use of slang in formal teaching makes communication lively and interesting.

Reasons (R) : Academic decency demands the avoidance of slang in the classroom environment.

In the light of the above statements, choose the correct option :

(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 true, but (R) is false

(4) (A) is false, but (R) is true

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510453**
Option 1 ID : **61547540757**
Option 2 ID : **61547540758**
Option 3 ID : **61547540759**
Option 4 ID : **61547540760**
Status : **Answered**
Chosen Option : **3**

Q.10 Which of the following sampling procedures will be appropriate for conducting researches with empirico-inductive research paradigm?

(1) Simple random sampling procedure

(2) Systematic sampling procedure

(3) Stratified sampling procedure

(4) Any of the non-probability sampling procedures

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510446**
Option 1 ID : **61547540729**
Option 2 ID : **61547540730**
Option 3 ID : **61547540731**
Option 4 ID : **61547540732**
Status : **Answered**
Chosen Option : **3**

Q.11 Which one of the following hetwabhasa (fallacy) is involved in the argument, "Sound is element because it is caused"?

(1) Viruddha or contradictory middle

(2) Satpratipaksa or inferentially contradicted middle

(3) Sādhyasama or the unproved middle

(4) Bādhita or non-inferentially contradicted middle

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510459**
Option 1 ID : **61547540781**
Option 2 ID : **61547540782**
Option 3 ID : **61547540783**
Option 4 ID : **61547540784**
Status : **Answered**
Chosen Option : **2**

Q.12 Consider the following argument :

Statements : Some chairs are curtains.

All curtains are bedsheets.

Conclusion : Some chairs are bedsheets.

What is the Mood of the above proposition?

(1) IAI (2) IAA
(3) IIA (4) AII

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510460**
Option 1 ID : **61547540785**
Option 2 ID : **61547540786**
Option 3 ID : **61547540787**
Option 4 ID : **61547540788**
Status : **Answered**
Chosen Option : **3**

Q.13 In which of the following types of learning materials, the presentations are highly structured and individualised?

(1) Textbooks prescribed by the universities
(2) Journals and the articles recommended for readings
(3) Writings of great thinkers selected for reflective readings
(4) Programmed instructional and modular learning material

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510442**
Option 1 ID : **61547540713**
Option 2 ID : **61547540714**
Option 3 ID : **61547540715**
Option 4 ID : **61547540716**
Status : **Answered**
Chosen Option : **3**

Q.14

Which of the following types of assessment is conducted periodically with an eye on standards?

(1) Formative assessment (2) Summative assessment

(3) Portfolio assessment (4) Performance assessment

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510443**
Option 1 ID : **61547540717**
Option 2 ID : **61547540718**
Option 3 ID : **61547540719**
Option 4 ID : **61547540720**
Status : **Answered**
Chosen Option : **1**

Q.15 In which of the following formats 'Chapter Scheme' of the document has to be formally approved by a research degree committee in the university?

(1) Thesis/dissertation (2) Seminar papers

(3) Research articles (4) Research monographs

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510447**
Option 1 ID : **61547540733**
Option 2 ID : **61547540734**
Option 3 ID : **61547540735**
Option 4 ID : **61547540736**
Status : **Answered**
Chosen Option : **3**

Q.16 A researcher intends to make use of ICT in his/her research. What considerations should weigh most in such a decision?

(a) Appropriateness of the tool used
(b) Cost involved in procuring it
(c) Availability of tools in the department where research is to be undertaken
(d) Willingness of his/her supervisor to offer help
(e) The company from which the ICT equipment has been procured

Choose your answer from the following options :

(1) (a), (b) and (c) (2) (c), (d) and (e)

(3) (a), (c) and (d) (4) (b), (c) and (e)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510445**
Option 1 ID : **61547540725**
Option 2 ID : **61547540726**
Option 3 ID : **61547540727**
Option 4 ID : **61547540728**
Status : **Answered**
Chosen Option : **2**

Q.17

A verbal communication technique used in teaching is

(1) Slow expression of words
(2) Varying the speed of voice and tone
(3) Presentation without pause
(4) Resorting to semantic jugglery

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510451**
Option 1 ID : **61547540749**
Option 2 ID : **61547540750**
Option 3 ID : **61547540751**
Option 4 ID : **61547540752**
Status : **Answered**
Chosen Option : **3**

Q.18

Which of the following statements differentiate teaching from learning?

(a) Teaching is a social act while learning is a personal act
(b) Teaching implies learning
(c) Teaching is like selling while learning is like buying
(d) Teaching can occur without learning taking place
(e) In teaching, influence is directed towards learning and learner, while in learning it is usually towards oneself

Choose the correct answer from the following options :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510440**
Option 1 ID : **61547540705**
Option 2 ID : **61547540706**
Option 3 ID : **61547540707**
Option 4 ID : **61547540708**
Status : **Answered**
Chosen Option : **1**

Q.19

When there is an animated discussion between a teacher and his or her students in the classroom, it can be classified as :

(1) Horizontal communication (2) Mechanical communication
(3) Linear communication (4) Categorical communication

Options 1. 1
2. 2
3. 3
4. 4

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Question Type : **MCQ**
Question ID : **61547510449**
Option 1 ID : **61547540741**
Option 2 ID : **61547540742**
Option 3 ID : **61547540743**
Option 4 ID : **61547540744**
Status : **Answered**

Chosen Option : **4**

Q.20 What is the exact equivalent discount of three successive discounts of 10%, 15% and 20% by sale of an article?

(1) 35.8% (2) 38.5%
(3) 35.5% (4) 38.8%

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510458**
Option 1 ID : **61547540777**
Option 2 ID : **61547540778**
Option 3 ID : **61547540779**
Option 4 ID : **61547540780**
Status : **Answered**
Chosen Option : **2**

Q.21 Information overload in a classroom evnironment by a teacher will lead to

(1) High level participation (2) Semantic precision
(3) Effective impression (4) Delayed feedback

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510450**
Option 1 ID : **61547540745**
Option 2 ID : **61547540746**
Option 3 ID : **61547540747**
Option 4 ID : **61547540748**
Status : **Answered**
Chosen Option : **3**

Q.22 According to classical Indian school of logic, what is the correct sequence of steps involved in Anumāna (influence)?

(1) Upanaya, Pratijña, Hetu, Udāharaṇa, Nigmana
(2) Pratijña, Hetu, Upanaya, Udāharaṇa, Nigmana
(3) Pratijña, Upanaya, Hetu, Udāharaṇa, Nigmana
(4) Pratijña, Hetu, Udāharaṇa, Upanaya, Nigmana

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510463**
Option 1 ID : **61547540797**
Option 2 ID : **61547540798**
Option 3 ID : **61547540799**
Option 4 ID : **61547540800**
Status : **Answered**
Chosen Option : **3**

Q.23

Which of the following modes of communication can be employed in a classroom for effective teaching?

(a) Top-down
(b) Iconic
(c) Associational
(d) Dissociational
(e) Symbolic
(f) Abstract

Choose the most appropriate option from the following :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510452**
Option 1 ID : **61547540753**
Option 2 ID : **61547540754**
Option 3 ID : **61547540755**
Option 4 ID : **61547540756**
Status : **Answered**
Chosen Option : **1**

Q.24

The sum of a number and its inverse is –4. The sum of their cubes is :

(1) –52 (2) 52
(3) 64 (4) –64

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510456**
Option 1 ID : **61547540769**
Option 2 ID : **61547540770**
Option 3 ID : **61547540771**
Option 4 ID : **61547540772**
Status : **Answered**
Chosen Option : **2**

Q.25

A university teacher plans to improve the study habits of students in his/her class. Which type of research paradigm will be helpful in this regard?

(1) Evaluative research paradigm (2) Fundamental research paradigm
(3) Applied research paradigm (4) Action research paradigm

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510444**
Option 1 ID : **61547540721**
Option 2 ID : **61547540722**
Option 3 ID : **61547540723**
Option 4 ID : **61547540724**
Status : **Answered**
Chosen Option : **2**

Comprehension:

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table :

Name of student / Subject (Max. Marks)	Percentage (%) of marks obtained				
	Maths (150)	Chemistry (130)	Physics (120)	Biology (100)	English (100)
Ankit	90	50	80	60	70
Amar	100	60	70	40	80
Sanya	90	60	85	80	60
Rahul	80	75	65	90	90
Puneet	80	80	70	85	50
Pooja	70	75	50	80	40

SubQuestion No : 26

Q.26

What is the overall percentage of marks obtained by Amar?

(1) 70% (2) 72%

(3) 60% (4) 58.33%

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510465**
Option 1 ID : **61547540801**
Option 2 ID : **61547540802**
Option 3 ID : **61547540803**
Option 4 ID : **61547540804**
Status : **Answered**
Chosen Option : **4**

Comprehension:

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table :

Name of student / Subject (Max. Marks)	Percentage (%) of marks obtained				
	Maths (150)	Chemistry (130)	Physics (120)	Biology (100)	English (100)
Ankit	90	50	80	60	70
Amar	100	60	70	40	80
Sanya	90	60	85	80	60
Rahul	80	75	65	90	90
Puneet	80	80	70	85	50
Pooja	70	75	50	80	40

SubQuestion No : 27

Q.27

In which subject the performance of the students is worst in terms of percentage of marks?

(1) Chemistry (2) Physics

(3) Biology (4) English

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510469**
Option 1 ID : **61547540817**
Option 2 ID : **61547540818**

Option 3 ID : **61547540819**
Option 4 ID : **61547540820**
Status : **Answered**
Chosen Option : **4**

Comprehension:

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table :

Subject (Max. Marks) / Name of student	Percentage (%) of marks obtained				
	Maths (150)	Chemistry (130)	Physics (120)	Biology (100)	English (100)
Ankit	90	50	80	60	70
Amar	100	60	70	40	80
Sanya	90	60	85	80	60
Rahul	80	75	65	90	90
Puneet	80	80	70	85	50
Pooja	70	75	50	80	40

SubQuestion No : 28

Q.28

What was the aggregate of marks obtained by Sanya in all the five subjects?

(1) 375 (2) 395

(3) 455 (4) 475

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510466**
Option 1 ID : **61547540805**
Option 2 ID : **61547540806**
Option 3 ID : **61547540807**
Option 4 ID : **61547540808**
Status : **Answered**
Chosen Option : **1**

Comprehension:

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table :

Subject (Max. Marks) / Name of student	Percentage (%) of marks obtained				
	Maths (150)	Chemistry (130)	Physics (120)	Biology (100)	English (100)
Ankit	90	50	80	60	70
Amar	100	60	70	40	80
Sanya	90	60	85	80	60
Rahul	80	75	65	90	90
Puneet	80	80	70	85	50
Pooja	70	75	50	80	40

SubQuestion No : 29

Q.29

What is the average marks obtained by all the six students in Chemistry?

(1) 86.66 (2) 76.66

(3) 66.66 (4) 60.00

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510467**
Option 1 ID : **61547540809**
Option 2 ID : **61547540810**
Option 3 ID : **61547540811**
Option 4 ID : **61547540812**
Status : **Answered**
Chosen Option : **2**

Comprehension:

The following table gives the percentage of marks obtained by 6 students in 5 different subjects in an examination. The numbers in the parenthesis give the maximum marks in each subject. Answer the given questions based on the table :

Subject (Max. Marks) / Name of student	Percentage (%) of marks obtained				
	Maths (150)	Chemistry (130)	Physics (120)	Biology (100)	English (100)
Ankit	90	50	80	60	70
Amar	100	60	70	40	80
Sanya	90	60	85	80	60
Rahul	80	75	65	90	90
Puneet	80	80	70	85	50
Pooja	70	75	50	80	40

SubQuestion No : 30

Q.30

How many students obtained 60% and above marks in all the subjects?

(1) Three (2) Two

(3) One (4) Zero

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510468**
Option 1 ID : **61547540813**
Option 2 ID : **61547540814**
Option 3 ID : **61547540815**
Option 4 ID : **61547540816**
Status : **Answered**
Chosen Option : **2**

Q.31

Which of the following statements is true in the Indian context?

(1) Autonomous colleges can grant degrees independent of universities

(2) Autonomous colleges can grant only bachelor's degree independent of universities

(3) Except doctoral degrees, all other degrees and diplomas can be granted by autonomous colleges

(4) Whatever may be the degree or diploma, autonomous colleges can grant them under their own name but under the seal of an affiliated university

Options 1. 1
2. 2
3. 3
4. 4

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Question Type : **MCQ**
Question ID : **61547510483**
Option 1 ID : **61547540873**
Option 2 ID : **61547540874**
Option 3 ID : **61547540875**
Option 4 ID : **61547540876**

Status : **Answered**
Chosen Option : **1**

Q.32

The term one gigabyte refers to :

(1) 1024 petabytes (2) 1024 megabytes
(3) 1024 kilobytes (4) 1024 bytes

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510471**
Option 1 ID : **61547540825**
Option 2 ID : **61547540826**
Option 3 ID : **61547540827**
Option 4 ID : **61547540828**
Status : **Answered**
Chosen Option : **3**

Q.33

Which one of the following tasks is associated with changing appearance of a document in word processing?

(1) Editing (2) Formatting
(3) Writing (4) Printing

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510470**
Option 1 ID : **61547540821**
Option 2 ID : **61547540822**
Option 3 ID : **61547540823**
Option 4 ID : **61547540824**
Status : **Answered**
Chosen Option : **2**

Q.34

Identify from the options given below, the co-benefit of Montreal Protocol

(1) Impetus to development of energy efficient systems
(2) Reduction in carbon dioxide (equivalent) emissions
(3) Convergence of efforts of international community in addressing air pollution
(4) Control of transboundary movement of hazardous waste

Options 1. 1
2. 2
3. 3
4. 4

ht

Question Type : **MCQ**
Question ID : **61547510475**
Option 1 ID : **61547540841**
Option 2 ID : **61547540842**
Option 3 ID : **61547540843**
Option 4 ID : **61547540844**
Status : **Answered**
Chosen Option : **4**

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Q.35

Database WOS stands for

(1) Web of Science
(2) Web of Sources
(3) World of Science
(4) Web of Service

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510480**
Option 1 ID : **61547540861**
Option 2 ID : **61547540862**
Option 3 ID : **61547540863**
Option 4 ID : **61547540864**
Status : **Answered**
Chosen Option : **1**

Q.36

The national agency for responding to computer security incidents as and when they occur, is

(1) CAT
(2) CDAC
(3) CCA
(4) ICERT

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510474**
Option 1 ID : **61547540837**
Option 2 ID : **61547540838**
Option 3 ID : **61547540839**
Option 4 ID : **61547540840**
Status : **Answered**
Chosen Option : **1**

Q.37

The most dominant source of Benzene emissions in ambient air is

(1) Cement industry
(2) Cigarettes
(3) Car exhausts
(4) Paints and varnish

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510478**
Option 1 ID : **61547540853**
Option 2 ID : **61547540854**
Option 3 ID : **61547540855**
Option 4 ID : **61547540856**
Status : **Answered**
Chosen Option : **3**

Q.38

PCI stands for

(1) Partial Component Interconnect
(2) Partial Component Interaction
(3) Peripheral Component Interconnect
(4) Peripheral Component Interaction

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510473**
Option 1 ID : **61547540833**
Option 2 ID : **61547540834**
Option 3 ID : **61547540835**
Option 4 ID : **61547540836**
Status : **Answered**
Chosen Option : **4**

Q.39 The most important pollutants that cause degradation of water quality in rivers and streams are

(a) Bacteria
(b) Nutrients
(c) Metals
(d) Total dissolved solids
(e) Algae

Choose the most appropriate answer from the options given below :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510479**
Option 1 ID : **61547540857**
Option 2 ID : **61547540858**
Option 3 ID : **61547540859**
Option 4 ID : **61547540860**
Status : **Answered**
Chosen Option : **3**

Q.40 The major barriers for access to higher education in India are :

(a) more opportunities of employment for less educated
(b) government policies
(c) language of instruction
(d) economic status
(e) competition from foreign universities
(f) gender discrimination in society

Choose the correct answer from the options given below :

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

Options 1. 1
2. 2
3. 3
4. 4

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Question Type : **MCQ**
Question ID : **61547510481**
Option 1 ID : **61547540865**
Option 2 ID : **61547540866**

Option 3 ID : **61547540867**
Option 4 ID : **61547540868**
Status : **Answered**
Chosen Option : **2**

Q.41 Under Green India Mission, how many hectares of degraded forest land is to be brought under afforestation?

(1) 02 million hectares (2) 06 million hectares
(3) 08 million hectares (4) 20 million hectares

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510476**
Option 1 ID : **61547540845**
Option 2 ID : **61547540846**
Option 3 ID : **61547540847**
Option 4 ID : **61547540848**
Status : **Answered**
Chosen Option : **4**

Q.42 _____ is a wireless technology built in electronic gadgets for transferring data over short distance

(1) WiFi (2) Bluetooth
(3) Modem (4) USB

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510472**
Option 1 ID : **61547540829**
Option 2 ID : **61547540830**
Option 3 ID : **61547540831**
Option 4 ID : **61547540832**
Status : **Answered**
Chosen Option : **3**

Q.43

The themes of some Sustainable Development Goals are

(a) Climate action

(b) Sustainable cities and communities

(c) Peace, justice and strong institutions

(d) Skill development and decent employment

(e) Green agriculture

(f) Responsible consumption and production

Choose the most appropriate from those given below :

(1) (a), (b), (c), (e) and (f)

(2) (b), (c), (e) and (f)

(3) (b), (c), (d), (e) and (f)

(4) (a), (b), (c) and (f)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510477**
Option 1 ID : **61547540849**
Option 2 ID : **61547540850**
Option 3 ID : **61547540851**
Option 4 ID : **61547540852**
Status : **Answered**
Chosen Option : **3**

Q.44 Rashtriya Uchhatar Shiksha Abhiyan (RUSA) aims to achieve the following in Higher Education System :

(a) Equity

(b) Access

(c) 50% GER

(d) Excellence

Choose the correct option from those given below :

(1) (a), (b) and (c)

(2) (a), (c) and (d)

(3) (a), (b) and (d)

(4) (b), (c) and (d)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510484**
Option 1 ID : **61547540877**
Option 2 ID : **61547540878**
Option 3 ID : **61547540879**
Option 4 ID : **61547540880**
Status : **Answered**

Chosen Option : **3**

Q.45

According to GATS (General Agreement on Trade and Services), higher education should be a commodity in the

(1) domestic public sector (2) domestic private sector

(3) non-trading sector (4) global marketplace

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510482**
Option 1 ID : **61547540869**
Option 2 ID : **61547540870**
Option 3 ID : **61547540871**
Option 4 ID : **61547540872**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Read the passage carefully and answer questions that follow :

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test", a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an anlaysis to make visible, in the form of evidence, the formation of the value and circulation of wealth–or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth–economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of government.

SubQuestion No : 46

Q.46

What is incompatible with optimal economic development?

(1) Play of ideas

(2) Absence of commercialism

(3) Political society

(4) Excessive government procedures

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510489**
Option 1 ID : **61547540893**
Option 2 ID : **61547540894**
Option 3 ID : **61547540895**
Option 4 ID : **61547540896**
Status : **Answered**

Chosen Option : **2**

Comprehension:

Read the passage carefully and answer questions that follow :

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test", a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an anlaysis to make visible, in the form of evidence, the formation of the value and circulation of wealth–or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth–economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of government.

SubQuestion No : 47

Q.47 The liberal critique examined the implications of

(1) market expansion (2) too much governance

(3) growth of political economy (4) politics of marketisation

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510487**
Option 1 ID : **61547540885**
Option 2 ID : **61547540886**
Option 3 ID : **61547540887**
Option 4 ID : **61547540888**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Read the passage carefully and answer questions that follow :

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test", a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an anlaysis to make visible, in the form of evidence, the formation of the value and circulation of wealth–or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth–economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of government.

SubQuestion No : 48

Q.48

What kind of evidence was needed to make the liberal critique visible?

(1) Circulation of wealth
(2) Pre-supposing individual profit
(3) Dearth in supply of grain
(4) Incompatibility of growth

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510488**
Option 1 ID : **61547540889**
Option 2 ID : **61547540890**
Option 3 ID : **61547540891**
Option 4 ID : **61547540892**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the passage carefully and answer questions that follow :

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test", a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an anlaysis to make visible, in the form of evidence, the formation of the value and circulation of wealth–or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth–economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of government.

SubQuestion No : 49

Q.49

The passage is indicative of the author's preference to

(1) economic hegemony of individuals
(2) limit government control of economics
(3) seek liberalism from juridical thought
(4) promote individual profits

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510490**
Option 1 ID : **61547540897**
Option 2 ID : **61547540898**
Option 3 ID : **61547540899**
Option 4 ID : **61547540900**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the passage carefully and answer questions that follow :

There is no doubt that the market as a reality and political economy as a theory played an important role in the liberal critique. But liberalism is neither the consequence nor the development of these; rather, the market played, in the liberal critique, the role of a "test", a locus of privileged experience where one can identify the effects of excessive governmentality and even weigh their significance; the analysis of the mechanisms of "dearth" or more generally, of the grain trade in the middle of the eighteenth century, was meant to show the point at which governing was always governing too much. Therefore, an anlaysis to make visible, in the form of evidence, the formation of the value and circulation of wealth–or, on the contrary, an analysis pre-supposing the intrinsic invisibility of the connection between individual profit-seeking and the growth of collective wealth–economics, in any case, shows a basic incompatibility between the optimal development of the economic process and maximisation of government procedures. It is by this, more than the play of ideas, the French or English economists broke away from mercantilism and commercialism; they freed reflection on economic practice from the hegemony of the "reason of state" and from the saturation of governmental intervention. By using it as a measure of "governing too much", they placed it at the limit of governmental action. Liberalism does not derive from juridical thought any more than it does from an economic analysis. It is not the idea of a political society, but the result of search for a liberal technology of government.

SubQuestion No : 50

Q.50 Which of the following played a role in the liberal critique?

(1) Liberalism as a consequence of market forces
(2) Liberalism as an offshoot of political economy
(3) Reality of market
(4) Political economy as a practice

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510486**
Option 1 ID : **61547540881**
Option 2 ID : **61547540882**
Option 3 ID : **61547540883**
Option 4 ID : **61547540884**
Status : **Answered**
Chosen Option : **2**

Section : **PART II Computer Science and Applications**

Q.1 Consider the language $L = \{a^n b^{n-3} \mid n > 2\}$ on $\Sigma = \{a, b\}$. Which one of the following grammars generates the language L?

(1) $S \to aA \mid a,\ A \to aAb \mid b$
(2) $S \to aaA \mid \lambda,\ A \to aAb \mid \lambda$
(3) $S \to aaaA \mid a,\ A \to aAb \mid \lambda$
(4) $S \to aaaA,\ A \to aAb \mid \lambda$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510534**
Option 1 ID : **61547541073**
Option 2 ID : **61547541074**
Option 3 ID : **61547541075**
Option 4 ID : **61547541076**
Status : **Answered**
Chosen Option : **2**

Q.2 A computer uses a memory unit of 512 K words of 32 bits each. A binary instruction code is stored in one word of the memory. The instruction has four parts: an addressing mode field to specify one of the two-addresssing mode (direct and indirect), an operation code, a register code part to specify one of the 256 registers and an address part. How many bits are there in addressing mode part, opcode part, register code part and the address part?

(1) 1, 3, 9, 19 (2) 1, 4, 9, 18

(3) 1, 4, 8, 19 (4) 1, 3, 8, 20

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510500**
Option 1 ID : **61547540937**
Option 2 ID : **61547540938**
Option 3 ID : **61547540939**
Option 4 ID : **61547540940**
Status : **Answered**
Chosen Option : **4**

Q.3 What is the output of following C program?

```
# include <stdio.h>
main( )
{
    int i, j, x = 0;
    for (i = 0; i < 5; ++i)
    for (j = 0; j < i; ++j)
    {
    x + = (i + j – 1);
    break ;
    }
    printf ("%d", x) ;
}
```

(1) 6 (2) 5

(3) 4 (4) 3

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510504**
Option 1 ID : **61547540953**
Option 2 ID : **61547540954**
Option 3 ID : **61547540955**
Option 4 ID : **61547540956**
Status : **Answered**
Chosen Option : **3**

Q.4 Consider the following languages :

$L_1 = \{a^n b^n c^m\} \cup \{a^n b^m c^m\},\ n, m \geq 0$

$L_2 = \{ww^R \mid w \in \{a, b\}^*\}$ Where R represents reversible operation.

Which one of the following is (are) inherently ambiguous language(s)?

(1) only L_1 (2) only L_2

(3) both L_1 and L_2 (4) neither L_1 nor L_2

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510538**
Option 1 ID : **61547541089**
Option 2 ID : **61547541090**
Option 3 ID : **61547541091**
Option 4 ID : **61547541092**
Status : **Answered**
Chosen Option : **3**

Q.5 A fuzzy conjunction operators, $t(x, y)$, and a fuzzy disjunction operator, $s(x, y)$, form a pair if they satisfy:

$t(x, y) = 1 - s(1 - x, 1 - y)$.

If $t(x, y) = \frac{xy}{(x + y - xy)}$ then $s(x, y)$ is given by

(1) $\frac{x + y}{1 - xy}$ (2) $\frac{x + y - 2xy}{1 - xy}$

(3) $\frac{x + y - xy}{1 - xy}$ (4) $\frac{x + y - xy}{1 + xy}$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510552**
Option 1 ID : **61547541145**
Option 2 ID : **61547541146**
Option 3 ID : **61547541147**
Option 4 ID : **61547541148**
Status : **Answered**
Chosen Option : **4**

Q.6 Which of the following statements are true regarding C++?

(a) Overloading gives the capability to an existing operator to operate on other data types.

(b) Inheritance in object oriented programming provides support to reusability.

(c) When object of a derived class is defined, first the constructor of derived class is executed then constructor of a base class is executed.

(d) Overloading is a type of polymorphism.

Choose the correct option from those given below :

(1) (a) and (b) only

(2) (a), (b) and (c) only

(3) (a), (b) and (d) only

(4) (b), (c) and (d) only

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510561**
Option 1 ID : **61547541181**
Option 2 ID : **61547541182**
Option 3 ID : **61547541183**
Option 4 ID : **61547541184**
Status : **Answered**
Chosen Option : **3**

Q.7 Which of the following class of IP address has the last address as 223.255.255.255?

(1) Class A (2) Class B
(3) Class C (4) Class D

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510543**
Option 1 ID : **61547541109**
Option 2 ID : **61547541110**
Option 3 ID : **61547541111**
Option 4 ID : **61547541112**
Status : **Answered**
Chosen Option : **2**

Q.8 Let $A = \{001, 0011, 11, 101\}$ and $B = \{01, 111, 111, 010\}$. Similarly, let $C = \{00, 001, 1000\}$ and $D = \{0, 11, 011\}$.

Which of the following pairs have a post-correspondence solution?

(1) Only pair (A, B) (2) Only pair (C, D)
(3) Both (A, B) and (C, D) (4) Neither (A, B) nor (C, D)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510542**
Option 1 ID : **61547541105**
Option 2 ID : **61547541106**
Option 3 ID : **61547541107**
Option 4 ID : **61547541108**
Status : **Answered**
Chosen Option : **1**

Q.9

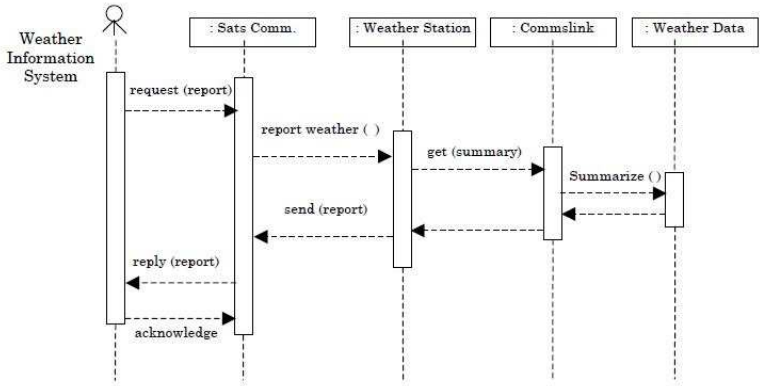

Figure 1

The sequence diagram given in Figure 1 for the Weather Information System takes place when an external system requests the summarized data from the weather station. The increasing order of lifeline for the objects in the system are:

(1) Sat comms → Weather station → Commslink → Weather data

(2) Sat comms → Comms link → Weather station → Weather data

(3) Weather data → Comms link → Weather station → Sat Comms

(4) Weather data → Weather station → Comms link → Sat Comms

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510579**
Option 1 ID : **61547541253**
Option 2 ID : **61547541254**
Option 3 ID : **61547541255**
Option 4 ID : **61547541256**
Status : **Answered**
Chosen Option : **3**

Q.10 A counting semaphore is initialized to 8. 3 wait ( ) operations and 4 signal ( ) operations are applied. Find the current value of semaphore variable.

(1) 9 (2) 5

(3) 1 (4) 4

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510514**
Option 1 ID : **61547540993**
Option 2 ID : **61547540994**
Option 3 ID : **61547540995**
Option 4 ID : **61547540996**
Status : **Answered**
Chosen Option : **3**

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Q.11

Consider the following Linear programming problem (LPP) :

Maximize $z = x_1 + x_2$

Subject to the constraints:

$x_1 + 2x_2 \le 2000$
$x_1 + x_2 \le 1500$
$x_2 \le 600$
$and\, x_1, x_2 \ge 0$

The solution of the above LPP is:

(1) $x_1 = 750,\ x_2 = 750, z = 1500$ (2) $x_1 = 500, x_2 = 1000, z = 1500$

(3) $x_1 = 1000,\ x_2 = 500,\ z = 1500$ (4) $x_1 = 900, x_2 = 600, z = 1500$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510492**
Option 1 ID : **61547540905**
Option 2 ID : **61547540906**
Option 3 ID : **61547540907**
Option 4 ID : **61547540908**
Status : **Answered**
Chosen Option : **3**

Q.12 Which of the following CPU scheduling algorithms is/are supported by LINUX operating system?

(1) Non-preemptive priority scheduling
(2) Preemptive priority scheduling and time sharing CPU scheduling
(3) Time sharing scheduling only
(4) Priority scheduling only

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510516**
Option 1 ID : **61547541001**
Option 2 ID : **61547541002**
Option 3 ID : **61547541003**
Option 4 ID : **61547541004**
Status : **Answered**
Chosen Option : **2**

Q.13 Which tag is used to enclose any number of javascript statements in HTML document?

(1) <code> (2) <script>
(3) <title> (4) <body>

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510506**
Option 1 ID : **61547540961**
Option 2 ID : **61547540962**
Option 3 ID : **61547540963**

Option 4 ID : **61547540964**
Status : **Answered**
Chosen Option : **2**

Q.14 When using Dijkstra's algorithm to find shortest path in a graph, which of the following statement is not true?

(1) It can find shortest path within the same graph data structure

(2) Every time a new node is visited, we choose the node with smallest known distance/ cost (weight) to visit first

(3) Shortest path always passes through least number of vertices

(4) The graph needs to have a non-negative weight on every edge

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510531**
Option 1 ID : **61547541061**
Option 2 ID : **61547541062**
Option 3 ID : **61547541063**
Option 4 ID : **61547541064**
Status : **Answered**
Chosen Option : **3**

Q.15 Consider the following statements with respect to duality in LPP :

(a) The final simplex table giving optimal solution of the primal also contains optimal solution of its dual in itself.

(b) If either the primal or the dual problem has a finite optimal solution, then the other problem also has a finite optimal solution.

(c) If either problem has an unbounded optimum solution, then the other problem has no feasible solution at all.

Which of the statements is (are) correct?

(1) only (a) and (b) (2) only (a) and (c)

(3) only (b) and (c) (4) (a), (b) and (c)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510557**
Option 1 ID : **61547541165**
Option 2 ID : **61547541166**
Option 3 ID : **61547541167**
Option 4 ID : **61547541168**
Status : **Answered**
Chosen Option : **2**

Q.16

Given two tables EMPLOYEE (EID, ENAME, DEPTNO)

DEPARTMENT (DEPTNO, DEPTNAME)

Find the most appropriate statement of the given query :

```
Select count (*) 'total'
from EMPLOYEE
where DEPTNO IN (D1, D2)
group by DEPTNO
having count (*) >5
```

(1) Total number of employees in each department D1 and D2

(2) Total number of employees of department D1 and D2 if their total is >5

(3) Display total number of employees in both departments D1 and D2

(4) The output of the query must have atleast two rows

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510512**
Option 1 ID : **61547540985**
Option 2 ID : **61547540986**
Option 3 ID : **61547540987**
Option 4 ID : **61547540988**
Status : **Answered**
Chosen Option : **3**

Q.17 In a B-Tree, each node represents a disk block. Suppose one block holds 8192 bytes. Each key uses 32 bytes. In a B-tree of order M there are M – 1 keys. Since each branch is on another disk block, we assume a branch is of 4 bytes. The total memory requirement for a non-leaf node is

(1) 32 M – 32 (2) 36 M – 32
(3) 36 M – 36 (4) 32 M – 36

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510528**
Option 1 ID : **61547541049**
Option 2 ID : **61547541050**
Option 3 ID : **61547541051**
Option 4 ID : **61547541052**
Status : **Answered**
Chosen Option : **1**

Q.18 Let $G = (V, T, S, P)$ be any context-free grammar without any λ–productions or unit productions. Let K be the maximum number of symbols on the right of any production in P. The maximum number of production rules for any equivalent grammar in Chomsky normal form is given by:

(1) $(K-1)|P|+|T|-1$ (2) $(K-1)|P|+|T|$
(3) $K|P|+|T|-1$ (4) $K|P|+|T|$

Where $|\cdot|$ denotes the cardinality of the set.

Options 1. 1
2. 2
3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510539**
Option 1 ID : **61547541093**
Option 2 ID : **61547541094**
Option 3 ID : **61547541095**
Option 4 ID : **61547541096**
Status : **Answered**
Chosen Option : **2**

Q.19 Given following equation:

$(142)_b + (112)_{b-2} = (75)_8$, find base b.

(1) 3 (2) 6

(3) 7 (4) 5

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510502**
Option 1 ID : **61547540945**
Option 2 ID : **61547540946**
Option 3 ID : **61547540947**
Option 4 ID : **61547540948**
Status : **Answered**
Chosen Option : **4**

Q.20 A micro instruction format has microoperation field which is divided into 2 subfields F1 and F2, each having 15 distinct microoperations, condition field CD for four status bits, branch field BR having four options used in conjunction with address field AD. The address space is of 128 memory words. The size of micro instruction is :

(1) 19 (2) 18

(3) 17 (4) 20

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510501**
Option 1 ID : **61547540941**
Option 2 ID : **61547540942**
Option 3 ID : **61547540943**
Option 4 ID : **61547540944**
Status : **Answered**
Chosen Option : **3**

Q.21

Consider the following statements with respect to network security :

(a) Message confidentiality means that the sender and the receiver expect privacy.

(b) Message integrity means that the data must arrive at the receiver exactly as they were sent.

(c) Message authentication means the receiver is ensured that the message is coming from the intended sender.

Which of the statements is (are) correct?

(1) Only (a) and (b) (2) Only (a) and (c)

(3) Only (b) and (c) (4) (a), (b) and (c)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510569**
Option 1 ID : **61547541213**
Option 2 ID : **61547541214**
Option 3 ID : **61547541215**
Option 4 ID : **61547541216**
Status : **Answered**
Chosen Option : **2**

Q.22 Consider the following statements :

(a) Windows Azure is a cloud-based operating system.

(b) Google App Engine is an integrated set of online services for consumers to communicate and share with others.

(c) Amazon Cloud Front is a web service for content delivery.

Which of the statements is (are) correct?

(1) Only (a) and (b) (2) Only (a) and (c)

(3) Only (b) and (c) (4) (a), (b) and (c)

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510568**
Option 1 ID : **61547541209**
Option 2 ID : **61547541210**
Option 3 ID : **61547541211**
Option 4 ID : **61547541212**
Status : **Answered**
Chosen Option : **3**

Q.23 Two concurrent executing transactions T_1 and T_2 are allowed to update same stock item say '*A*' in an uncontrolled manner. In such scenario, following problems may occur :

(a) Dirty read problem

(b) Lost update problem

(c) Transaction failure

(d) Inconsistent database state

Which of the following option is correct if database system has no concurrency module and allows concurrent execution of above two transactions?

(1) (a), (b) and (c) only (2) (c) and (d) only

(3) (a) and (b) only (4) (a), (b) and (d) only

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510563**
Option 1 ID : **61547541189**
Option 2 ID : **61547541190**
Option 3 ID : **61547541191**
Option 4 ID : **61547541192**
Status : **Answered**
Chosen Option : **2**

Q.24 Consider the following learning algorithms :

(a) Logistic repression
(b) Back propogation
(c) Linear repression

Which of the following option represents classification algorithms?

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510571**
Option 1 ID : **61547541221**
Option 2 ID : **61547541222**
Option 3 ID : **61547541223**
Option 4 ID : **61547541224**
Status : **Answered**
Chosen Option : **3**

Q.25 Consider the following grammar :

$S \to 0A \mid 0BB$

$A \to 00A \mid \lambda$

$B \to 1B \mid 11C$

$C \to B$

Which language does this grammar generate?

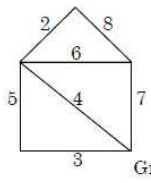
(1) $L((00)*0+(11)*1)$ (2) $L(0(11)*+1(00)*)$
(3) $L((00)*0)$ (4) $L(0(11)*1)$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510535**
Option 1 ID : **61547541077**
Option 2 ID : **61547541078**
Option 3 ID : **61547541079**
Option 4 ID : **61547541080**
Status : **Answered**
Chosen Option : **2**

Q.26

The weight of minimum spanning tree in graph G, calculated using Kruskal's algorithm is :



Graph G

(1) 14 (2) 15

(3) 17 (4) 18

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510496**
Option 1 ID : **61547540921**
Option 2 ID : **61547540922**
Option 3 ID : **61547540923**
Option 4 ID : **61547540924**
Status : **Answered**
Chosen Option : **2**

Q.27 The Reduced Instruction Set Computer (RISC) characteristics are :

(a) Single cycle instruction execution
(b) Variable length instruction formats
(c) Instructions that manipulates operands in memory
(d) Efficient instruction pipeline

Choose the correct characteristics from the options given below :

(1) (a) and (b) (2) (b) and (c)

(3) (a) and (d) (4) (c) and (d)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510558**
Option 1 ID : **61547541169**
Option 2 ID : **61547541170**
Option 3 ID : **61547541171**
Option 4 ID : **61547541172**
Status : **Answered**
Chosen Option : **3**

Q.28 Let the population of chromosomes in genetic algorithm is represented in terms of binary number. The strength of fitness of a chromosome in decimal form, x, is given by

$$Sf(x) = \frac{f(x)}{\Sigma f(x)} where\ f(x) = x^2$$

The population is given by P where:

$P = \{(01101), (11000), (01000), (10011)\}$

The strength of fitness of chromosome (11000) is ————————.

(1) 24 (2) 576

(3) 14.4 (4) 49.2

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510555**
Option 1 ID : **61547541157**
Option 2 ID : **61547541158**
Option 3 ID : **61547541159**
Option 4 ID : **61547541160**
Status : **Answered**
Chosen Option : **3**

Q.29 Consider the following statements :

(a) The running time of dynamic programming algorithm is alway $\theta(\rho)$ where ρ is number of subproblems.

(b) When a recurrence relation has cyclic dependency, it is impossible to use that recurrence relation (unmodified) in a correct dynamic program.

(c) For a dynamic programming algorithm, computing all values in a bottom-up fashion is asymptotically faster than using recursion and memorization.

(d) If a problem X can be reduced to a known NP-hard problem, then X must be NP-hard.

Which of the statement(s) is (are) true?

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510566**
Option 1 ID : **61547541201**
Option 2 ID : **61547541202**
Option 3 ID : **61547541203**
Option 4 ID : **61547541204**
Status : **Answered**
Chosen Option : **3**

Q.30 Which of the following are legal statements in C programming language?

(a) int * P = &44;
(b) int * P = &r;
(c) int P = &a;
(d) int P = a;

Choose the correct option :

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

Options 1. 1
2. 2
3. 3
4. 4

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Question Type : **MCQ**
Question ID : **61547510562**
Option 1 ID : **61547541185**
Option 2 ID : **61547541186**
Option 3 ID : **61547541187**

Option 4 ID : **61547541188**
Status : **Answered**
Chosen Option : **3**

Q.31 Let P be the set of all people. Let R be a binary relation on P such that (a, b) is in R if a is a brother of b. Is R symmetric transitive, an equivalence relation, a partial order relation?

(1) NO,NO,NO,NO
(2) NO,NO,YES,NO
(3) NO,YES,NO,NO
(4) NO,YES,YES,NO

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510495**
Option 1 ID : **61547540917**
Option 2 ID : **61547540918**
Option 3 ID : **61547540919**
Option 4 ID : **61547540920**
Status : **Answered**
Chosen Option : **4**

Q.32 Which of the following algorithms is not used for line clipping?

(1) Cohen-Sutherland algorithm
(2) Southerland-Hodgeman algorithm
(3) Liang-Barsky algorithm
(4) Nicholl-Lee-Nicholl algorithm

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510508**
Option 1 ID : **61547540969**
Option 2 ID : **61547540970**
Option 3 ID : **61547540971**
Option 4 ID : **61547540972**
Status : **Answered**
Chosen Option : **4**

Q.33

The following multithreaded algorithm computes transpose of a matrix in parallel :

p Trans (X, Y, N)

if $N = 1$

then $Y[1.1] \leftarrow X[1.1]$

else partition X into four $(N/2) \times (N/2)$ submatrices $X_{11}, X_{12}, X_{21}, X_{22}$

partition Y into four $(N/2) \times (N/2)$ submatrices $Y_{11}, Y_{12}, Y_{21}, Y_{22}$

spawn p Trans $(X_{11}, Y_{11}, N/2)$

spawn p Trans $(X_{12}, Y_{12}, N/2)$

spawn p Trans $(X_{21}, Y_{21}, N/2)$

spawn p Trans $(X_{22}, Y_{22}, N/2)$

What is the asymptotic parallelism of the algorithm?

(1) T_1 / T_∞ or $\theta(N^2 / \lg N)$ (2) T_1 / T_∞ or $\theta(N / \lg N)$

(3) T_1 / T_∞ or $\theta(\lg N / N^2)$ (4) T_1 / T_∞ or $\theta(\lg N / N)$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510565**
Option 1 ID : **61547541197**
Option 2 ID : **61547541198**
Option 3 ID : **61547541199**
Option 4 ID : **61547541200**
Status : **Answered**
Chosen Option : **3**

Q.34 A non-pipelined system takes 30ns to process a task. The same task can be processed in a four-segment pipeline with a clock cycle of 10ns. Determine the speed up of the pipeline for 100 tasks.

(1) 3 (2) 4

(3) 3.91 (4) 2.91

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510499**
Option 1 ID : **61547540933**
Option 2 ID : **61547540934**
Option 3 ID : **61547540935**
Option 4 ID : **61547540936**
Status : **Answered**
Chosen Option : **1**

Q.35

Given CPU time slice of 2ms and following list of processes.

Process	Burst time (ms)	Arrival time
p_1	3	0
p_2	4	2
p_3	5	5

Find average turnaround time and average waiting time using round robin CPU scheduling?

(1) 4, 0 (2) 5.66, 1.66

(3) 5.66, 0 (4) 7, 2

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510520**
Option 1 ID : **61547541017**
Option 2 ID : **61547541018**
Option 3 ID : **61547541019**
Option 4 ID : **61547541020**
Status : **Answered**
Chosen Option : **3**

Q.36 Java Virtual Machine (JVM) is used to execute architectural neutral byte code. Which of the following is needed by the JVM for execution of Java Code?

(1) Class loader only

(2) Class loader and Java Interpreter

(3) Class loader, Java Interpreter and API

(4) Java Interpreter only

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510522**
Option 1 ID : **61547541025**
Option 2 ID : **61547541026**
Option 3 ID : **61547541027**
Option 4 ID : **61547541028**
Status : **Answered**
Chosen Option : **3**

Q.37 In a system for a restaurant, the main scenario for placing order is given below :

(a) Customer reads menu

(b) Customer places order

(c) Order is sent to kitchen for preparation

(d) Ordered items are served

(e) Customer requests for a bill for the order

(f) Bill is prepared for this order

(g) Customer is given the bill

(h) Customer pays the bill

A sequence diagram for the scenario will have atleast how many objects among whom the messages will be exchanged.

(1) 3 (2) 4

(3) 5 (4) 6

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510523**
Option 1 ID : **61547541029**
Option 2 ID : **61547541030**
Option 3 ID : **61547541031**
Option 4 ID : **61547541032**
Status : **Answered**
Chosen Option : **2**

Q.38 The full form of ICANN is

(1) Internet Corporation for Assigned Names and Numbers
(2) Internet Corporation for Assigned Numbers and Names
(3) Institute of Cooperation for Assigned Names and Numbers
(4) Internet Connection for Assigned Names and Numbers

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510547**
Option 1 ID : **61547541125**
Option 2 ID : **61547541126**
Option 3 ID : **61547541127**
Option 4 ID : **61547541128**
Status : **Answered**
Chosen Option : **3**

Q.39 The Data Encryption Standard (DES) has a function consists of four steps. Which of the following is correct order of these four steps?

(1) an expansion permutation, S-boxes, an XOR operation, a straight permutation
(2) an expansion permutation, an XOR operation, S-boxes, a straight permutation
(3) a straight permutation, S-boxes, an XOR operation, an expansion permutation
(4) a straight permutation, an XOR operation, S-boxes, an expansion permutation

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510580**
Option 1 ID : **61547541257**
Option 2 ID : **61547541258**
Option 3 ID : **61547541259**
Option 4 ID : **61547541260**
Status : **Answered**
Chosen Option : **3**

Q.40

Given two tables $R1(x, y)$ and $R2(y, z)$ with 50 and 30 number of tuples respectively. Find maximum number of tuples in the output of natural join between tables $R1$ and $R2$ i.e. $R1 * R2$? (* - Natural Join)

(1) 30 (2) 20

(3) 50 (4) 1500

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510511**
Option 1 ID : **61547540981**
Option 2 ID : **61547540982**
Option 3 ID : **61547540983**
Option 4 ID : **61547540984**
Status : **Answered**
Chosen Option : **2**

Q.41 Match List-I with List-II :

List I		List II	
(a)	Frame attribute	(i)	to create link in HTML
(b)	<tr> tag	(ii)	for vertical alignment of content in cell
(c)	Valign attribute	(iii)	to enclose each row in table
(d)	<a> tag	(iv)	to specify the side of the table frame that display border

Choose the correct option from those given below :

(1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(2) (a)-(ii), (b)-(i), (c)-(iii), (d)-(iv)

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

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510575**
Option 1 ID : **61547541237**
Option 2 ID : **61547541238**
Option 3 ID : **61547541239**
Option 4 ID : **61547541240**
Status : **Answered**
Chosen Option : **3**

Q.42 The time complexity to multiply two polynomials of degree n using Fast Fourier transform method is :

(1) $\theta(n \lg n)$ (2) $\theta(n^2)$

(3) $\theta(n)$ (4) $\theta(\lg n)$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510532**
Option 1 ID : **61547541065**
Option 2 ID : **61547541066**

Option 3 ID : **61547541067**
Option 4 ID : **61547541068**
Status : **Answered**
Chosen Option : **2**

Q.43 Let W_{ij} represents weight between node i at layer k and node j at layer $(k-1)$ of a given multilayer perceptron. The weight updation using gradient descent method is given by

(1) $W_{ij}(t+1) = W_{ij}(t) + \alpha \frac{\partial E}{\partial W_{ij}}, 0 \le \alpha \le 1$ (2) $W_{ij}(t+1) = W_{ij}(t) - \alpha \frac{\partial E}{\partial W_{ij}}, 0 \le \alpha \le 1$

(3) $W_{ij}(t+1) = \alpha \frac{\partial E}{\partial W_{ij}}, 0 \le \alpha \le 1$ (4) $W_{ij}(t+1) = -\alpha \frac{\partial E}{\partial W_{ij}}, 0 \le \alpha \le 1$

Where α and E represents learning rate and Error in the output respectively.

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510553**
Option 1 ID : **61547541149**
Option 2 ID : **61547541150**
Option 3 ID : **61547541151**
Option 4 ID : **61547541152**
Status : **Answered**
Chosen Option : **4**

Q.44 A clique in an undirected graph $G = \langle V, E \rangle$ is a subset $V' \subseteq V$ of vertices, such that

(1) If $(u, v) \in E$ then $u \in V'$ and $v \in V'$

(2) If $(u, v) \in E$ then $u \in V'$ or $v \in V'$

(3) Each pair of vertices in V' is connected by an edge

(4) All pairs of vertices in V' are not connected by an edge

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510526**
Option 1 ID : **61547541041**
Option 2 ID : **61547541042**
Option 3 ID : **61547541043**
Option 4 ID : **61547541044**
Status : **Answered**
Chosen Option : **2**

Q.45 What is the worst case running time of Insert and Extract-min, in an implementation of a priority queue using an unsorted array? Assume that all insertions can be accomodated.

(1) $\theta(1), \theta(n)$ (2) $\theta(n), \theta(1)$

(3) $\theta(1), \theta(1)$ (4) $\theta(n), \theta(n)$

Options 1. 1
2. 2
3. 3
4. 4

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Question Type : **MCQ**
Question ID : **61547510527**
Option 1 ID : **61547541045**
Option 2 ID : **61547541046**
Option 3 ID : **61547541047**

Option 4 ID : **61547541048**
Status : **Answered**
Chosen Option : **3**

Q.46 Match List-I and List-II :

	List I		List II
(a)	Isolated I/O	(i)	same set of control signal for I/O and memory communication
(b)	Memory mapped I/O	(ii)	separate instructions for I/O and memory communication
(c)	I/O interface	(iii)	requires control signals to be transmitted between the communicating units
(d)	Asynchronous data transfer	(iv)	resolve the differences in central computer and peripherals

Choose the correct option from those given below :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510577**
Option 1 ID : **61547541245**
Option 2 ID : **61547541246**
Option 3 ID : **61547541247**
Option 4 ID : **61547541248**
Status : **Answered**
Chosen Option : **1**

Q.47 A network with bandwidth of 10 Mbps can pass only an average of 12,000 frames per minute with each frame carrying an average of 10,000 bits. What is the throughput of this network?

(1) 1,000,000 bps (2) 2,000,000 bps
(3) 12,000,000 bps (4) 1,200,00,000 bps

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510546**
Option 1 ID : **61547541121**
Option 2 ID : **61547541122**
Option 3 ID : **61547541123**
Option 4 ID : **61547541124**
Status : **Answered**
Chosen Option : **4**

ht **Q.48** What are the greatest lower bound (GLB) and the least upper bound (LUB) of the sets $A = \{3, 9, 12\}$ and $B = \{1, 2, 4, 5, 10\}$ if they exist in poset $(z^+, /)$? 1284_20

(1) $A(GLB-3, LUB-36); B(GLB-1, LUB-20)$
(2) $A(GLB-3, LUB-12); B(GLB-1, LUB-10)$
(3) $A(GLB-1, LUB-36); B\ (GLB-2,\ LUB-20)$
(4) $A(GLB-1,\ LUB-12);\ B(GLB-2,\ LUB-10)$

Options 1. 1

2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510494**
Option 1 ID : **61547540913**
Option 2 ID : **61547540914**
Option 3 ID : **61547540915**
Option 4 ID : **61547540916**
Status : **Answered**
Chosen Option : **3**

Q.49 A basic feasible solution of an $m \times n$ transportation problem is said to be non-degenerate, if basic feasible solution contains exactly ———— number of individual allocation in ———— positions.

(1) $m+n+1$, independent (2) $m+n-1$, independent
(3) $m+n-1$, appropriate (4) $m-n+1$, independent

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510491**
Option 1 ID : **61547540901**
Option 2 ID : **61547540902**
Option 3 ID : **61547540903**
Option 4 ID : **61547540904**
Status : **Answered**
Chosen Option : **4**

Q.50 Consider the following language families :

$L_1 \equiv$ The context – free languages

$L_2 \equiv$ The context – sensitive languages

$L_3 \equiv$ The recursively enumerable languages

$L_4 \equiv$ The recursive languages

Which one of the following options is correct?

(1) $L_1 \subseteq L_2 \subseteq L_3 \subseteq L_4$ (2) $L_2 \subseteq L_1 \subseteq L_3 \subseteq L_4$
(3) $L_1 \subseteq L_2 \subseteq L_4 \subseteq L_3$ (4) $L_2 \subseteq L_1 \subseteq L_4 \subseteq L_3$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510540**
Option 1 ID : **61547541097**
Option 2 ID : **61547541098**
Option 3 ID : **61547541099**
Option 4 ID : **61547541100**
Status : **Answered**
Chosen Option : **3**

Q.51

Identify the circumstances under which pre-emptive CPU scheduling is used :

(a) A process switches from Running state to Ready state

(b) A process switches from Waiting state to Ready state

(c) A process completes its execution

(d) A process switches from Ready to Waiting state

Choose the correct option :

(1) (a) and (b) only

(2) (a) and (d) only

(3) (c) and (d) only

(4) (a), (b), (c) only

Options 1. 1

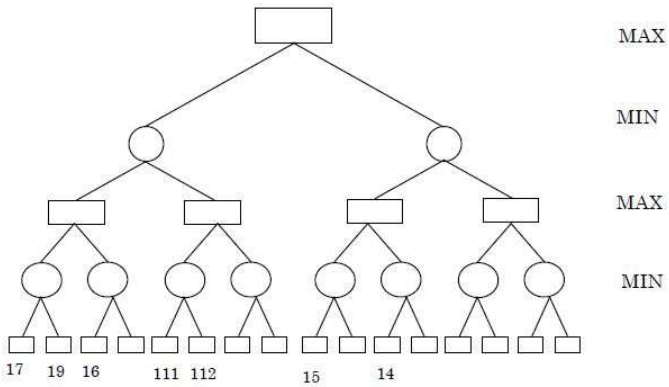
2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510564**
Option 1 ID : **61547541193**
Option 2 ID : **61547541194**
Option 3 ID : **61547541195**
Option 4 ID : **61547541196**
Status : **Answered**
Chosen Option : **3**

Q.52 Consider the game tree given below



Here ○ and □ represent MIN and MAX nodes respectively. The value of the root node of the game tree is:

(1) 14 (2) 17

(3) 111 (4) 112

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510550**
Option 1 ID : **61547541137**
Option 2 ID : **61547541138**
Option 3 ID : **61547541139**
Option 4 ID : **61547541140**
Status : **Answered**
Chosen Option : **3**

Q.53

Consider a subnet with 720 routers. If a three-level hierarchy is chosen, with eight clusters, each containing 9 regions of 10 routers, then total number of entries in hierarchical table of each router is

(1) 25 (2) 27

(3) 53 (4) 72

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510544**
Option 1 ID : **61547541113**
Option 2 ID : **61547541114**
Option 3 ID : **61547541115**
Option 4 ID : **61547541116**
Status : **Answered**
Chosen Option : **3**

Q.54 An ———— chart is a project schedule representation that presents project plan as a directed graph. The critical path is the ———— sequence of ———— tasks and it defines project ————.

(1) Activity, Shortest, Independent, Cost

(2) Activity, Longest, Dependent, Duration

(3) Activity, Longest, Independent, Duration

(4) Activity, Shortest, Dependent, Duration

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510524**
Option 1 ID : **61547541033**
Option 2 ID : **61547541034**
Option 3 ID : **61547541035**
Option 4 ID : **61547541036**
Status : **Answered**
Chosen Option : **3**

Q.55 Piconet is a basic unit of a bluetooth system consisting of ———— master node and up to ———— active slave nodes.

(1) one, five (2) one, seven

(3) two, eight (4) one, eight

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510545**
Option 1 ID : **61547541117**
Option 2 ID : **61547541118**
Option 3 ID : **61547541119**
Option 4 ID : **61547541120**
Status : **Answered**
Chosen Option : **3**

Q.56

Which of the following interprocess communication model is used to exchange messages among co-operative processes?

(1) Shared memory model

(2) Message passing model

(3) Shared memory and message passing model

(4) Queues

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510519**
Option 1 ID : **61547541013**
Option 2 ID : **61547541014**
Option 3 ID : **61547541015**
Option 4 ID : **61547541016**
Status : **Answered**
Chosen Option : **3**

Q.57 Consider the following statements :

S_1 : If a group $(G,*)$ is of order n, and $a \in G$ is such that $a^m = e$ for some integer $m \leq n$, then m must divide n.

S_2 : If a group $(G,*)$ is of even order, then there must be an element $a \in G$ such that $a \neq e$ and $a * a = e$.

Which of the statements is (are) correct?

(1) Only S_1

(2) Only S_2

(3) Both S_1 and S_2

(4) Neither S_1 nor S_2

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510556**
Option 1 ID : **61547541161**
Option 2 ID : **61547541162**
Option 3 ID : **61547541163**
Option 4 ID : **61547541164**
Status : **Answered**
Chosen Option : **2**

Q.58 Consider $\Sigma = \{w, x\}$ and $T = \{x, y, z\}$. Define homomorphism h by :

$$h(x) = xzy$$

$$h(w) = zxyy$$

If L is the regular language denoted by $r = (w + x^*)(ww)^*$, then the regular language $h(L)$ is given by

(1) $(z\,x\,yy + x\,z\,y)(z\,x\,yy)$

(2) $(zxyy + (xzy)^*)(zxyy\,zxyy)^*$

(3) $(zxyy + xzy)(zxyy)^*$

(4) $(zxyy + (xzy)^*)(zxyy\,zxyy)$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**

Question ID : **61547510536**
Option 1 ID : **61547541081**
Option 2 ID : **61547541082**
Option 3 ID : **61547541083**
Option 4 ID : **61547541084**
Status : **Answered**
Chosen Option : **2**

Q.59 Consider a paging system where translation look aside buffer (TLB) a special type of associative memory is used with hit ratio of 80%.

Assume that memory reference takes 80 nanoseconds and reference time to TLB is 20 nanoseconds. What will be the effective memory access time given 80% hit ratio?

(1) 110 nanoseconds (2) 116 nanoseconds

(3) 200 nanoseconds (4) 100 nanoseconds

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510517**
Option 1 ID : **61547541005**
Option 2 ID : **61547541006**
Option 3 ID : **61547541007**
Option 4 ID : **61547541008**
Status : **Answered**
Chosen Option : **4**

Q.60 Consider the following statements with respect to approaches to fill area on raster systems :

P : To determine the overlap intervals for scan lines that cross the area.

Q : To start from a given interior position and paint outward from this point until we encounter the specified boundary conditions.

Select the correct answer from the options given below :

(1) P only
(2) Q only
(3) Both P and Q
(4) Neither P nor Q

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510560**
Option 1 ID : **61547541177**
Option 2 ID : **61547541178**
Option 3 ID : **61547541179**
Option 4 ID : **61547541180**
Status : **Answered**
Chosen Option : **3**

Q.61

Which of the following methods are used to pass any number of parameters to the operating system through system calls?

(1) Registers

(2) Block or table in main memory

(3) Stack

(4) Block in main memory and stack

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510521**
Option 1 ID : **61547541021**
Option 2 ID : **61547541022**
Option 3 ID : **61547541023**
Option 4 ID : **61547541024**
Status : **Answered**
Chosen Option : **3**

Q.62 Match the Agile Process models with the task performed during the model :

List I		List II	
(a)	Scrum	(i)	CRC cards
(b)	Adaptive software development	(ii)	Sprint backlog
(c)	Extreme programming	(iii)	<action> the <result> <by/for/of/to> $a(n)$ <object>
(d)	Feature-driven development	(iv)	Time box release plan

Choose the correct option from those given below :

(1) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

(2) (a)-(i), (b)-(iii), (c)-(ii), (d)-(iv)

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

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510574**
Option 1 ID : **61547541233**
Option 2 ID : **61547541234**
Option 3 ID : **61547541235**
Option 4 ID : **61547541236**
Status : **Answered**
Chosen Option : **3**

Q.63

Match List-I and List-II :

	List I		List II
(a)	Physical layer	(i)	Provide token management service
(b)	Transport layer	(ii)	Concerned with transmitting raw bits over a communication channel
(c)	Session layer	(iii)	Concerned with the syntax and semantics of the information transmitted
(d)	Presentation layer	(iv)	True end-to-end layer from source to destination

Choose the correct option from those given below :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510572**
Option 1 ID : **61547541225**
Option 2 ID : **61547541226**
Option 3 ID : **61547541227**
Option 4 ID : **61547541228**
Status : **Answered**
Chosen Option : **4**

Q.64 According to Dempster-Shafer theory for uncertainty management,

(1) $Bel(A) + Bel(\neg A) \leq 1$

(2) $Bel(A) + Bel(\neg A) \geq 1$

(3) $Bel(A) + Bel(\neg A) = 1$

(4) $Bel(A) + Bel(\neg A) = 0$

Where Bel(A) denotes Belief of event A.

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510548**
Option 1 ID : **61547541129**
Option 2 ID : **61547541130**
Option 3 ID : **61547541131**
Option 4 ID : **61547541132**
Status : **Answered**
Chosen Option : **3**

Q.65

Consider the following grammars :

$G_1 : S \to aSb \mid bSa \mid aa$

$G_2 : S \to aSb \mid bSa \mid SS \mid \lambda$

$G_3 : S \to aSb \mid bSa \mid SS \mid a$

$G_4 : S \to aSb \mid bSa \mid SS \mid SSS \mid \lambda$

Which of the following is correct w.r.t. the above grammars?

(1) G_1 and G_3 are equivalent (2) G_2 and G_3 are equivalent

(3) G_2 and G_4 are equivalent (4) G_3 and G_4 are equivalent

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510533**
Option 1 ID : **61547541069**
Option 2 ID : **61547541070**
Option 3 ID : **61547541071**
Option 4 ID : **61547541072**
Status : **Answered**
Chosen Option : **3**

Q.66 Consider the following :

(a) Trapping at local maxima
(b) Reaching a plateau
(c) Traversal along the ridge.

Which of the following option represents shortcomings of the hill climbing algorithm?

(1) (a) and (b) only (2) (a) and (c) only

(3) (b) and (c) only (4) (a), (b) and (c)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510570**
Option 1 ID : **61547541217**
Option 2 ID : **61547541218**
Option 3 ID : **61547541219**
Option 4 ID : **61547541220**
Status : **Answered**
Chosen Option : **2**

Q.67 Consider the following statements with respect to the language $L = \{a^n b^n \mid n \geq 0\}$

$S_1 : L^2$ is context free language

$S_2 : L^k$ is conext-free language for any given $k \geq 1$

$S_3 : \overline{L}$ and L^* are context free languages

Which one of the following is correct?

(1) only S_1 and S_2 (2) only S_1 and S_3

(3) only S_2 and S_3 (4) S_1, S_2 and S_3

Options 1. 1
2. 2

3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510537**
Option 1 ID : **61547541085**
Option 2 ID : **61547541086**
Option 3 ID : **61547541087**
Option 4 ID : **61547541088**
Status : **Answered**
Chosen Option : **3**

Q.68 According to the ISO-9126 Standard Quality Model, match the attributes given in List-I with their definitions in List-II :

List I		List II	
(a)	Functionality	(i)	Relationship between level of performance and amount of resources
(b)	Reliability	(ii)	Characteristics related with achievement of purpose
(c)	Efficiency	(iii)	Effort needed to make for improvement
(d)	Maintainability	(iv)	Capability of software to maintain performance of software

Choose the correct option from the ones given below :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510573**
Option 1 ID : **61547541229**
Option 2 ID : **61547541230**
Option 3 ID : **61547541231**
Option 4 ID : **61547541232**
Status : **Answered**
Chosen Option : **3**

Q.69 Consider the following statements:

S_1 : $\forall x P(x) \vee \forall x Q(x)$ and $\forall x (P(x) \vee Q(x))$ are not logically equivalent.

S_2 : $\exists x P(x) \wedge \exists x Q(x)$ and $\exists x (P(x) \wedge Q(x))$ are not logically equivalent

Which of the following statements is/are correct?

(1) Only S_1 (2) Only S_2
(3) Both S_1 and S_2 (4) Neither S_1 nor S_2

Options 1. 1
2. 2
3. 3
4. 4

ht 1284_20

Question Type : **MCQ**
Question ID : **61547510549**
Option 1 ID : **61547541133**
Option 2 ID : **61547541134**
Option 3 ID : **61547541135**

Option 4 ID : **61547541136**
Status : **Answered**
Chosen Option : **3**

Q.70 Which of the following binary codes for decimal digits are self complementing?

(a) 8421 code
(b) 2421 code
(c) excess-3 code
(d) excess-3 gray code

Choose the correct option :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510559**
Option 1 ID : **61547541173**
Option 2 ID : **61547541174**
Option 3 ID : **61547541175**
Option 4 ID : **61547541176**
Status : **Answered**
Chosen Option : **1**

Q.71 How many reflexive relations are there on a set with 4 elements?

(1) 2^4 (2) 2^{12}
(3) 4^2 (4) 2

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510498**
Option 1 ID : **61547540929**
Option 2 ID : **61547540930**
Option 3 ID : **61547540931**
Option 4 ID : **61547540932**
Status : **Answered**
Chosen Option : **3**

Q.72 Which of the following is not needed by an encryption algorithm used in Cryptography?

(1) KEY (2) Message
(3) Ciphertext (4) User details

Options 1. 1
2. 2
3. 3
4. 4

ht 1284_20

Question Type : **MCQ**
Question ID : **61547510515**
Option 1 ID : **61547540997**
Option 2 ID : **61547540998**

Option 3 ID : **61547540999**
Option 4 ID : **61547541000**
Status : **Answered**
Chosen Option : **3**

Q.73 Which of the component module of DBMS does rearrangement and possible ordering of operations, eliminate redundancy in query and use efficient algorithms and indexes during the exceution of a query?

(1) query compiler (2) query optimizer
(3) Stored data manager (4) Database processor

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510510**
Option 1 ID : **61547540977**
Option 2 ID : **61547540978**
Option 3 ID : **61547540979**
Option 4 ID : **61547540980**
Status : **Answered**
Chosen Option : **3**

Q.74 Consider a weighted directed graph. The current shortest distance from source S to node x is represented by $d[x]$. Let $d[v]=29$, $d[u]=15$, $w[u,v]=12$. What is the updated value of $d[v]$ based on current information?

(1) 29 (2) 27
(3) 25 (4) 17

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510530**
Option 1 ID : **61547541057**
Option 2 ID : **61547541058**
Option 3 ID : **61547541059**
Option 4 ID : **61547541060**
Status : **Answered**
Chosen Option : **3**

Q.75 A rectangle is bound by the lines $x=0; y=0; x=5 \text{ and } y=3$. The line segment joining (–1, 0) and (4, 5), if clipped against this window will connect the points ————————.

(1) (0, 1) and (3, 3) (2) (0, 1) and (2, 3)
(3) (0, 1) and (4, 5) (4) (0, 1) and (3, 5)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510507**
Option 1 ID : **61547540965**
Option 2 ID : **61547540966**
Option 3 ID : **61547540967**
Option 4 ID : **61547540968**
Status : **Answered**
Chosen Option : **3**

Q.76 The following program is stored in the memory unit of the basic computer. Give the content of accumulator register in hexadecimal after the execution of the program.

Location	Instruction
010	CLA
011	ADD 016
012	BUN 014
013	HLT
014	AND 017
015	BUN 013
016	C1A5
017	93C6

(1) A1B4 (2) 81B4

(3) A184 (4) 8184

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510503**
Option 1 ID : **61547540949**
Option 2 ID : **61547540950**
Option 3 ID : **61547540951**
Option 4 ID : **61547540952**
Status : **Answered**
Chosen Option : **4**

Q.77 Let $a^{2c} \bmod n = (a^c)^2 \bmod n$ and $a^{2c+1} \bmod n = a \cdot (a^c)^2 \bmod n$. For $a = 7$, $b = 17$ and $n = 561$, what is the value of $a^b \pmod n$?

(1) 160 (2) 166

(3) 157 (4) 67

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510525**
Option 1 ID : **61547541037**
Option 2 ID : **61547541038**
Option 3 ID : **61547541039**
Option 4 ID : **61547541040**
Status : **Answered**
Chosen Option : **3**

Q.78 The order of schema ?10?101? and ???0??1 are ———— and ———— respectively.

(1) 5,3 (2) 5,2

(3) 7,5 (4) 8,7

Options 1. 1
2. 2
3. 3
4. 4

ht 1284_20

Question Type : **MCQ**
Question ID : **61547510554**
Option 1 ID : **61547541153**
Option 2 ID : **61547541154**
Option 3 ID : **61547541155**
Option 4 ID : **61547541156**

Status : **Answered**
Chosen Option : **3**

Q.79 Consider the following statements :

S_1 : These exists no algorithm for deciding if any two Turing machines M_1 and M_2 accept the same language.

S_2 : Let M_1 and M_2 be arbitrary Turing machines. The problem to determine $L(M_1) \subseteq L(M_2)$ is undecidable.

Which of the statements is (are) correct?

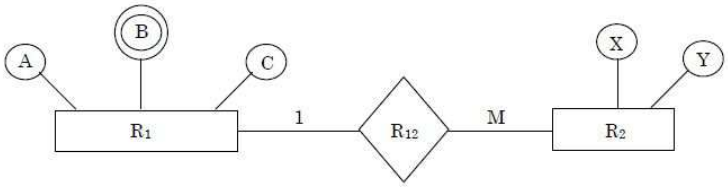
(1) Only S_1 (2) Only S_2

(3) Both S_1 and S_2 (4) Neither S_1 nor S_2

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510541**
Option 1 ID : **61547541101**
Option 2 ID : **61547541102**
Option 3 ID : **61547541103**
Option 4 ID : **61547541104**
Status : **Answered**
Chosen Option : **3**

Q.80 Find minimum number of tables required for converting the following entity relationship diagram into relational database?



(1) 2 (2) 4

(3) 3 (4) 5

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510513**
Option 1 ID : **61547540989**
Option 2 ID : **61547540990**
Option 3 ID : **61547540991**
Option 4 ID : **61547540992**
Status : **Answered**
Chosen Option : **1**

Q.81 If we want to resize a 1024 × 768 pixels image to one that is 640 pixels wide with the same aspect ratio, what would be the height of the resized image?

(1) 420 Pixels (2) 460 Pixels

(3) 480 Pixels (4) 540 Pixels

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510509**
Option 1 ID : **61547540973**
Option 2 ID : **61547540974**
Option 3 ID : **61547540975**
Option 4 ID : **61547540976**
Status : **Answered**
Chosen Option : **1**

Q.82 An instruction is stored at location 500 with its address field at location 501. The address field has the value 400. A processor register R_1 contains the number 200. Match the addressing mode (List-I) given below with effective address (List-II) for the given instruction:

List I		List II	
(a)	Direct	(i)	200
(b)	Register indirect	(ii)	902
(c)	Index with R_1 as the index register	(iii)	400
(d)	Relative	(iv)	600

Choose the correct option from those given below :

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

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510576**
Option 1 ID : **61547541241**
Option 2 ID : **61547541242**
Option 3 ID : **61547541243**
Option 4 ID : **61547541244**
Status : **Answered**
Chosen Option : **3**

Q.83 A tree has $2n$ vertices of degree 1, $3n$ vertices of degree 2, n vertices of degree 3. Determine the number of vertices and edges in tree.

(1) 12,11 (2) 11,12
(3) 10,11 (4) 9,10

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510497**
Option 1 ID : **61547540925**
Option 2 ID : **61547540926**
Option 3 ID : **61547540927**
Option 4 ID : **61547540928**
Status : **Answered**
Chosen Option : **3**

Q.84

Match List-I with List-II :

List I		List II	
(a)	Micro operation	(i)	Specify micro operations
(b)	Micro programmed control unit	(ii)	Improve CPU utilization
(c)	Interrupts	(iii)	Control Memory
(d)	Micro instruction	(iv)	Elementary operation performed on data stored in registers

Choose the correct option from those given below :

(1) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

(2) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

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

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

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510578**
Option 1 ID : **61547541249**
Option 2 ID : **61547541250**
Option 3 ID : **61547541251**
Option 4 ID : **61547541252**
Status : **Answered**
Chosen Option : **1**

Q.85 Suppose a system has 12 magnetic tape drives and at time t_0, three processes are allotted tape drives out of their need as given below :

	Maximum Needs	Current Needs
p_0	10	5
p_1	4	2
p_2	9	2

At time t_0, the system is in safe state. Which of the following is safe sequence so that deadlock is avoided?

(1) $\langle p_0, p_1, p_2 \rangle$ (2) $\langle p_1, p_0, p_2 \rangle$

(3) $\langle p_2, p_1, p_0 \rangle$ (4) $\langle p_0, p_2, p_1 \rangle$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510518**
Option 1 ID : **61547541009**
Option 2 ID : **61547541010**
Option 3 ID : **61547541011**
Option 4 ID : **61547541012**
Status : **Answered**
Chosen Option : **3**

Q.86

Consider the following statements :

(a) Fiber optic cable is much lighter than copper cable.

(b) Fiber optic cable is not affected by power surges or electromagnetic interference.

(c) Optical transmission is inherently bidirectional.

Which of the statements is (are) correct?

(1) Only (a) and (b) (2) Only (a) and (c)

(3) Only (b) and (c) (4) (a), (b) and (c)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510567**
Option 1 ID : **61547541205**
Option 2 ID : **61547541206**
Option 3 ID : **61547541207**
Option 4 ID : **61547541208**
Status : **Answered**
Chosen Option : **3**

Q.87 Consider the following models:

M_1: Mamdani model

M_2: Takagi – Sugeno–Kang model

M_3: Kosko's additive model (SAM)

Which of the following option contains examples of additive rule model?

(1) Only M_1 and M_2

(2) Only M_2 and M_3

(3) Only M_1 and M_3

(4) M_1,M_2, and M_3

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510551**
Option 1 ID : **61547541141**
Option 2 ID : **61547541142**
Option 3 ID : **61547541143**
Option 4 ID : **61547541144**
Status : **Answered**
Chosen Option : **3**

Q.88 Give asymptotic upper and lower bound for $T(n)$ given below. Assume $T(n)$ is constant for $n \le 2$. $T(n) = 4T(\sqrt{n}) + \lg^2 n$

(1) $T(n) = \theta(\lg(\lg^2 n)\lg n)$ (2) $T(n) = \theta(\lg^2 n \lg n)$

(3) $T(n) = \theta(\lg^2 n \lg \lg n)$ (4) $T(n) = \theta(\lg(\lg n)\lg n)$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510529**
Option 1 ID : **61547541053**
Option 2 ID : **61547541054**
Option 3 ID : **61547541055**
Option 4 ID : **61547541056**
Status : **Answered**
Chosen Option : **3**

Q.89 The Boolean expression $AB + A\overline{B} + \overline{A}C + AC$ is unaffected by the value of the Boolean variable ————————.

(1) A (2) B
(3) C (4) A,B and C

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510493**
Option 1 ID : **61547540909**
Option 2 ID : **61547540910**
Option 3 ID : **61547540911**
Option 4 ID : **61547540912**
Status : **Answered**
Chosen Option : **3**

Q.90 Let A be the base class in C++ and B be the derived class from A with protected inheritance. Which of the following statement is false for class B?

(1) Member function of class B can access protected data of class A
(2) Member function of Class B can access public data of class A
(3) Member function of class B cannot access private data of class A
(4) Object of derived class B can access public base class data

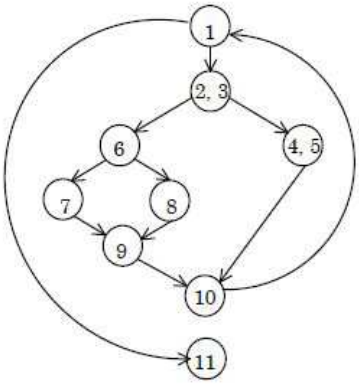
Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510505**
Option 1 ID : **61547540957**
Option 2 ID : **61547540958**
Option 3 ID : **61547540959**
Option 4 ID : **61547540960**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Answer the following question (91-95) based on flow graph F.

A flow graph F with entry node (1) and exit node (11) is shown below :



Flowgraph F

SubQuestion No : 91

Q.91 How many nodes are there in the longest independent path?

(1) 6 (2) 7

(3) 8 (4) 9

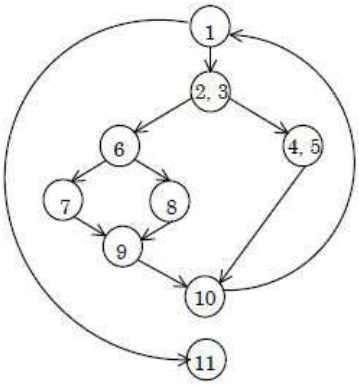
Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510585**
Option 1 ID : **61547541273**
Option 2 ID : **61547541274**
Option 3 ID : **61547541275**
Option 4 ID : **61547541276**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Answer the following question (91-95) based on flow graph F.

A flow graph F with entry node (1) and exit node (11) is shown below :



Flowgraph F

SubQuestion No : 92

Q.92 How many regions are there in flowgraph F?

(1) 2 (2) 3

(3) 4 (4) 5

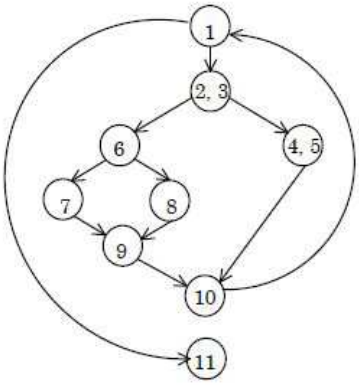
Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510584**
Option 1 ID : **61547541269**
Option 2 ID : **61547541270**
Option 3 ID : **61547541271**
Option 4 ID : **61547541272**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Answer the following question (91-95) based on flow graph F.

A flow graph F with entry node (1) and exit node (11) is shown below :



Flowgraph F

SubQuestion No : 93

Q.93 How many nodes are there in flowgraph F?

(1) 9 (2) 10

(3) 11 (4) 12

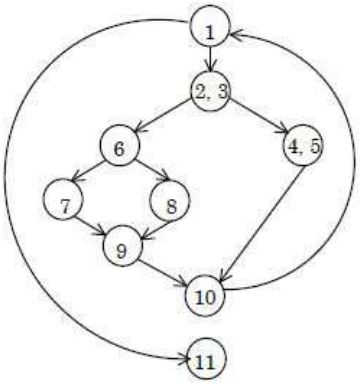
Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510582**
Option 1 ID : **61547541261**
Option 2 ID : **61547541262**
Option 3 ID : **61547541263**
Option 4 ID : **61547541264**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer the following question (91-95) based on flow graph F.

A flow graph F with entry node (1) and exit node (11) is shown below :



Flowgraph F

SubQuestion No : 94

Q.94 What is the cyclomatic complexity of flowgraph F?

(1) 2 (2) 3

(3) 4 (4) 5

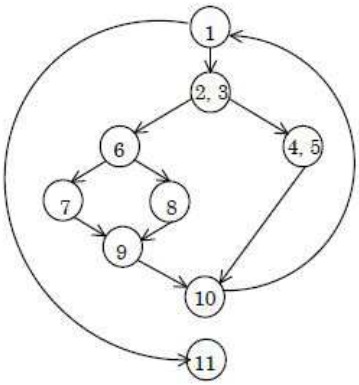
Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510583**
Option 1 ID : **61547541265**
Option 2 ID : **61547541266**
Option 3 ID : **61547541267**
Option 4 ID : **61547541268**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer the following question (91-95) based on flow graph F.

A flow graph F with entry node (1) and exit node (11) is shown below :



Flowgraph F

SubQuestion No : 95

Q.95 How many predicate nodes are there and what are their names?

(1) Three : (1, (2, 3), 6) (2) Three : (1, 4, 6)

(3) Four : ((2, 3), 6, 10, 11) (4) Four : ((2, 3), 6, 9, 10)

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510586**
Option 1 ID : **61547541277**
Option 2 ID : **61547541278**
Option 3 ID : **61547541279**
Option 4 ID : **61547541280**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer question (96-100) based on the problem statement given below :

An organization needs to maintain database having five attributes A, B, C, D, E. These attributes are functionally dependent on each other for which functionally dependency set F is given as : $F: \{A \to BC, D \to E, BC \to D, A \to D\}$. Consider a universal relation $R(A, B, C, D, E)$ with functional dependency set F. Also all attributes are simple and take atomic values only.

SubQuestion No : 96

Q.96 Minimal cover F' of functional dependency set F is

(1) $F' = \{A \to B, A \to C, BC \to D, D \to E\}$

(2) $F' = \{A \to BC, B \to D, D \to E\}$

(3) $F' = \{A \to B, A \to C, A \to D, D \to E\}$

(4) $F' = \{A \to B, A \to C, B \to D, C \to D, D \to E\}$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510588**
Option 1 ID : **61547541281**
Option 2 ID : **61547541282**
Option 3 ID : **61547541283**
Option 4 ID : **61547541284**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer question (96-100) based on the problem statement given below :

An organization needs to maintain database having five attributes A, B, C, D, E. These attributes are functionally dependent on each other for which functionally dependency set F is given as : $F: \{A \to BC, D \to E, BC \to D, A \to D\}$. Consider a universal relation $R(A, B, C, D, E)$ with functional dependency set F. Also all attributes are simple and take atomic values only.

SubQuestion No : 97

Q.97

Assume that given table R is decomposed in two tables

$R_1(A, B, C)$ with functional dependency set $f_1 = \{A \to B, A \to C\}$ and

$R_2(A, D, E)$ with FD set $F_2 = \{A \to D, D \to E\}$.

Which of the following option is true w.r.t. given decomposition?

(1) Dependency preservation property is followed

(2) R_1 and R_2 are both in 2 NF

(3) R_2 is in 2 NF and R_3 is in 3 NF

(4) R_1 is in 3 NF and R_2 is in 2 NF

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510592**
Option 1 ID : **61547541297**
Option 2 ID : **61547541298**
Option 3 ID : **61547541299**
Option 4 ID : **61547541300**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer question (96-100) based on the problem statement given below :

An organization needs to maintain database having five attributes A, B, C, D, E. These attributes are functionally dependent on each other for which functionally dependency set F is given as : $F: \{A \to BC, D \to E, BC \to D, A \to D\}$. Consider a universal relation $R(A, B, C, D, E)$ with functional dependency set F. Also all attributes are simple and take atomic values only.

SubQuestion No : 98

Q.98

Identify the redundant functional dependency in F

(1) $BC \to D$ (2) $D \to E$

(3) $A \to D$ (4) $A \to BC$

Options 1. 1

2. 2

3. 3

4. 4

Question Type : **MCQ**
Question ID : **61547510591**
Option 1 ID : **61547541293**
Option 2 ID : **61547541294**
Option 3 ID : **61547541295**
Option 4 ID : **61547541296**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer question (96-100) based on the problem statement given below :

An organization needs to maintain database having five attributes A, B, C, D, E. These attributes are functionally dependent on each other for which functionally dependency set F is given as : $F: \{A \to BC, D \to E, BC \to D, A \to D\}$. Consider a universal relation $R(A, B, C, D, E)$ with functional dependency set F. Also all attributes are simple and take atomic values only.

SubQuestion No : 99

Q.99

Identify primary key of table R with functional dependency set F

(1) BC (2) AD

(3) A (4) AB

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510589**
Option 1 ID : **61547541285**
Option 2 ID : **61547541286**
Option 3 ID : **61547541287**
Option 4 ID : **61547541288**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Answer question (96-100) based on the problem statement given below :

An organization needs to maintain database having five attributes A, B, C, D, E. These attributes are functionally dependent on each other for which functionally dependency set F is given as : $F: \{A \rightarrow BC, D \rightarrow E, BC \rightarrow D, A \rightarrow D\}$. Consider a universal relation $R(A, B, C, D, E)$ with functional dependency set F. Also all attributes are simple and take atomic values only.

SubQuestion No : 100

Q.100 Identify the normal form in which relation R belong to

(1) $1\ NF$ (2) $2\ NF$

(3) $3\ NF$ (4) $BCNF$

Options 1. 1
2. 2
3. 3
4. 4

Question Type : **MCQ**
Question ID : **61547510590**
Option 1 ID : **61547541289**
Option 2 ID : **61547541290**
Option 3 ID : **61547541291**
Option 4 ID : **61547541292**
Status : **Answered**
Chosen Option : **3**