

## UGC NET 2019

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|------------------|--------------------------------------|
| Application No   |                                      |
| Roll No          |                                      |
| Participant Name |                                      |
| 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

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 : Marked For Review

Chosen Option : 3

Q.2

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 : Marked For Review

Chosen Option : 2

Question Type : MCQ

Question ID : 61547510445

Option 1 ID : 61547540725

Option 2 ID : 61547540726

Option 3 ID : 61547540727

Option 4 ID : 61547540728

Status : Marked For Review

Chosen Option : 3

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

Q.4

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 : 3

Question Type : MCQ

Question ID : 61547510439

Option 1 ID : 61547540701

Option 2 ID : 61547540702

Option 3 ID : 61547540703

Option 4 ID : 61547540704

Status : Marked For Review

Chosen Option : 2



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

Chosen Option : 1

Q.9

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 : 4

Q.10

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 : Marked For Review

Chosen Option : 3

Question Type : MCQ

Question ID : 61547510440

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

Option 1 ID : 61547540705

Option 2 ID : 61547540706

Option 3 ID : 61547540707

Option 4 ID : 61547540708

Status : Answered

Chosen Option : 1

Q.12

Information overload in a classroom environment 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 : Marked For Review

Chosen Option : 4

Q.13

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 : Marked For Review

Chosen Option : 4

Q.14

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 : 4

Q.15

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.16

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 : Marked For Review

Chosen Option : 1

Q.17

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

Question Type : MCQ

Question ID : 61547510449

Option 1 ID : 61547540741

Option 2 ID : 61547540742

Option 3 ID : 61547540743

Option 4 ID : 61547540744

Status : Marked For Review

Chosen Option : 2

Q.18

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.19

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

- (1) Upanaya, Pratijñā, Hetu, Udāharaṇa, Nigmana  
(2) Pratijñā, Hetu, Upanaya, Udāharaṇa, Nigmana  
(3) Pratijñā, Upanaya, Hetu, Udāharaṇa, Nigmana  
(4) Pratijñā, 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 : Marked For Review

Chosen Option : 4

Q.20

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 : Marked For Review  
Chosen Option : 1

Q.21

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 : 2

Q.22

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) Bādhitā 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 : Marked For Review  
Chosen Option : 4

Question Type : MCQ

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 ID : 61547510442  
Option 1 ID : 61547540713  
Option 2 ID : 61547540714  
Option 3 ID : 61547540715  
Option 4 ID : 61547540716  
Status : Marked For Review  
Chosen Option : 4

Q.24

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 : 1

Question Type : MCQ  
Question ID : 61547510460  
Option 1 ID : 61547540785  
Option 2 ID : 61547540786

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

Option 3 ID : 61547540787  
Option 4 ID : 61547540788  
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) | 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 : 3

Question Type : MCQ  
Question ID : 61547510466  
Option 1 ID : 61547540805









- 2. 2
- 3. 3
- 4. 4

Q.35

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

Question Type : MCQ

Question ID : 61547510483

Option 1 ID : 61547540873

Option 2 ID : 61547540874

Option 3 ID : 61547540875

Option 4 ID : 61547540876

Status : Marked For Review

Chosen Option : 4

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 : 2

Question Type : MCQ

Question ID : 61547510481

Option 1 ID : 61547540865

Option 2 ID : 61547540866

Option 3 ID : 61547540867

Option 4 ID : 61547540868

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

Status : **Marked For Review**  
Chosen Option : **3**

Q.38

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 : **4**

Q.39

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

Question Type : MCQ

Question ID : 61547510475

Option 1 ID : 61547540841

Option 2 ID : 61547540842

Option 3 ID : 61547540843

Option 4 ID : 61547540844

Status : Marked For Review

Chosen Option : 3

Q.40

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 : Marked For Review

Chosen Option : 4

- (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

Question Type : MCQ

Question ID : 61547510479

Option 1 ID : 61547540857

Option 2 ID : 61547540858

Option 3 ID : 61547540859

Option 4 ID : 61547540860

Status : Marked For Review

Chosen Option : 4

- 2. 2
- 3. 3
- 4. 4

Q.42

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 : Marked For Review

Chosen Option : 2

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 : 4

**Q.44** 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 : **2**

**Q.45** 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**

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 : **3**

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 analysis 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 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 : 61547510490

Option 1 ID : 61547540897

Option 2 ID : 61547540898

Option 3 ID : 61547540899

Option 4 ID : 61547540900

Status : Not Answered

Chosen Option : --

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 analysis 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 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 : 61547510487

Option 1 ID : 61547540885

Option 2 ID : 61547540886

Option 3 ID : 61547540887

Option 4 ID : 61547540888

Status : Marked For Review

Chosen Option : 2

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 analysis 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

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 : 61547510489

Option 1 ID : 61547540893

Option 2 ID : 61547540894

Option 3 ID : 61547540895

Option 4 ID : 61547540896

Status : Marked For Review

Chosen Option : 4

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 analysis 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

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 : 61547510486

Option 1 ID : 61547540881

Option 2 ID : 61547540882

Option 3 ID : 61547540883

Option 4 ID : 61547540884

Status : Marked For Review

Chosen Option : 1

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 analysis 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

Section : PART II Computer Science and Applications

Q.1 If we want to resize a  $1024 \times 768$  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 : 3

Question Type : MCQ

Question ID : 61547510541

Option 1 ID : 61547541101

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

Option 2 ID : 61547541102  
 Option 3 ID : 61547541103  
 Option 4 ID : 61547541104  
 Status : Answered  
 Chosen Option : 3

Q.3

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 : 1

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 : 3

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

Q.5 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 : 1

Q.6

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 : 2

Q.7

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



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

Q.11

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 : 4

Q.12

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

- Options 1. 1  
2. 2

Question Type : MCQ  
Question ID : 61547510532  
Option 1 ID : 61547541065  
Option 2 ID : 61547541066  
Option 3 ID : 61547541067  
Option 4 ID : 61547541068  
Status : Marked For Review  
Chosen Option : 2

3.3  
4.4

Q.14

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

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

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

Q.16 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

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

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 : Marked For Review

Chosen Option : 1

Question Type : MCQ

Question ID : 61547510552

Option 1 ID : 61547541145

Option 2 ID : 61547541146

Option 3 ID : 61547541147

Option 4 ID : 61547541148

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

Status : Answered  
Chosen Option : 2

Q.18

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.19 Given following equation:

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

- (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 : Marked For Review

Chosen Option : 3

Q.20 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)  $S \rightarrow aA \mid a, A \rightarrow aAb \mid b$  (2)  $S \rightarrow aaA \mid \lambda, A \rightarrow aAb \mid \lambda$   
(3)  $S \rightarrow aaaA \mid a, A \rightarrow aAb \mid \lambda$  (4)  $S \rightarrow aaaA, A \rightarrow aAb \mid \lambda$

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 : Marked For Review

Chosen Option : 3

Q.21 The order of schema  $\{10^*10^*\}$  and  $\{0^*0^*1\}$  are \_\_\_\_\_ and \_\_\_\_\_ respectively.

- (1) 5,3 (2) 5,2  
(3) 7,5 (4) 8,7

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

Question Type : MCQ

Question ID : 61547510554

Option 1 ID : 61547541153

Option 2 ID : 61547541154

Option 3 ID : 61547541155

Option 4 ID : 61547541156

Status : Marked For Review

Chosen Option : 3

Question Type : MCQ

Question ID : 61547510513

Option 1 ID : 61547540989





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><br>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

**Q.27** 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

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 : 4

Q.28 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 accommodated.

- (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

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 : 1

Q.29 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 : 3

Question Type : MCQ  
 Question ID : 61547510535  
 Option 1 ID : 61547541077

Consider the following grammar :

$$S \rightarrow 0A \mid 0BB$$

$$A \rightarrow 00A \mid \lambda$$

$$B \rightarrow 1B \mid 11C$$

$$C \rightarrow B$$

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

Option 2 ID : 61547541078

Option 3 ID : 61547541079

Option 4 ID : 61547541080

Status : Answered

Chosen Option : 1

Q.31

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 : Marked For Review

Chosen Option : 4



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

Q.35 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

Question Type : MCQ

Question ID : 61547510550

Option 1 ID : 61547541137

Option 2 ID : 61547541138

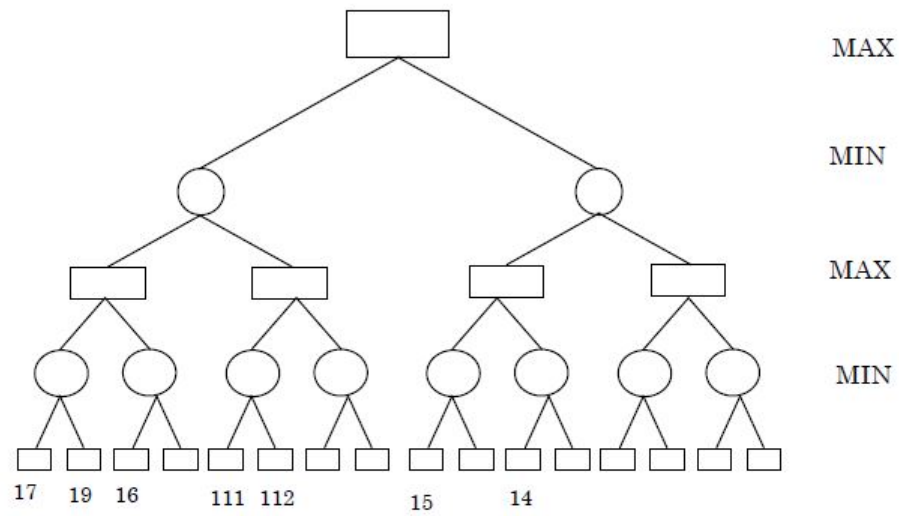
Option 3 ID : 61547541139

Option 4 ID : 61547541140

Status : Answered

Chosen Option : 2

Consider the game tree given below



Here  $\circ$  and  $\square$  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

Q.37 Consider the following statements :

- (a) The running time of dynamic programming algorithm is always  $\theta(\rho)$  where  $\rho$  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 : Marked For Review  
Chosen Option : 3

Q.38 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 : 4

Question Type : MCQ  
Question ID : 61547510562

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

Option 1 ID : 61547541185

Option 2 ID : 61547541186

Option 3 ID : 61547541187

Option 4 ID : 61547541188

Status : Answered

Chosen Option : 3



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

Option 3 ID : 61547541027  
Option 4 ID : 61547541028  
Status : Answered  
Chosen Option : 3

Q.43 Give asymptotic upper and lower bound for  $T(n)$  given below. Assume  $T(n)$  is constant for  $n \leq 2$ .  $T(n) = 4T(\sqrt{n}) + \lg^2 n$

- (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 : Marked For Review  
Chosen Option : 1

|       |   |   |
|-------|---|---|
| $p_1$ | 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)  $\langle p_0, p_2, p_1 \rangle$

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 : 2

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

Q.45 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 : 4

**Q.46** 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 : Marked For Review

Chosen Option : 3

**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 : 2





**Q.52** 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-addressing 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 : 3

**Q.53** 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  $(z^+, /)$ ?

- (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 : 2

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



Question Type : MCQ  
 Question ID : 61547510571  
 Option 1 ID : 61547541221  
 Option 2 ID : 61547541222  
 Option 3 ID : 61547541223  
 Option 4 ID : 61547541224  
 Status : Marked For Review  
 Chosen Option : 4



Q.56 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 : 2

Q.57 Consider the following grammars :

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

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

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

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

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.58 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 : Marked For Review  
 Chosen Option : 2

**Q.59** 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 execution 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 : Marked For Review  
Chosen Option : 2

**Q.60** 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

Question Type : MCQ  
Question ID : 61547510580  
Option 1 ID : 61547541257

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

Option 2 ID : 61547541258  
Option 3 ID : 61547541259  
Option 4 ID : 61547541260  
Status : Marked For Review  
Chosen Option : 3

Q.62 The Boolean expression  $AB + \bar{A}\bar{B} + \bar{A}C + AC$  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 : Marked For Review  
Chosen Option : 3

- (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)

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

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

Q.64

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 : 3

Q.65

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 : Marked For Review

Chosen Option : 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

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

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 context-free language for any given  $k \geq 1$

$S_3 : \bar{L}$  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 : 1

- (1)  $(zxyy + xzy)(zxyy)^*$                       (2)  $(zxyy + (xzy)^*)(zxyy zxyy)^*$   
 (3)  $(zxyy + xzy)(zxyy)^*$                       (4)  $(zxyy + (xzy)^*)(zxyy zxyy)$

Question Type : MCQ

Question ID : 61547510536

Option 1 ID : 61547541081

Option 2 ID : 61547541082

Option 3 ID : 61547541083

Option 4 ID : 61547541084

Status : Marked For Review

Chosen Option : 2

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

Q.69

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)  $W_{ij}(t+1) = W_{ij}(t) + \alpha \frac{\partial E}{\partial W_{ij}}, 0 \leq \alpha \leq 1$       (2)  $W_{ij}(t+1) = W_{ij}(t) - \alpha \frac{\partial E}{\partial W_{ij}}, 0 \leq \alpha \leq 1$   
 (3)  $W_{ij}(t+1) = \alpha \frac{\partial E}{\partial W_{ij}}, 0 \leq \alpha \leq 1$       (4)  $W_{ij}(t+1) = -\alpha \frac{\partial E}{\partial W_{ij}}, 0 \leq \alpha \leq 1$

Where  $\alpha$  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 : Marked For Review

Chosen Option : 3

Q.70

A rectangle is bound by the lines  $x = 0; y = 0; x = 5$  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

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 : 3



Q.73

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.74

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 : 4

**Q.75** 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 : 1

**Q.76** 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 : 1

Question Type : MCQ

Question ID : 61547510558

Option 1 ID : 61547541169

Option 2 ID : 61547541170

Option 3 ID : 61547541171

Option 4 ID : 61547541172

Status : Marked For Review

Chosen Option : 3



4. 4

**Q.80** 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 : 3

**Q.81** 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 : Marked For Review  
Chosen Option : 2

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 : 4

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

Q.83 Given CPU time slice of 2ms and following list of processes.

| Process | Burst time<br>(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 : 2

Question Type : MCQ  
Question ID : 61547510551  
Option 1 ID : 61547541141  
Option 2 ID : 61547541142  
Option 3 ID : 61547541143  
Option 4 ID : 61547541144  
Status : Marked For Review  
Chosen Option : 4

Consider the following models:

M<sub>1</sub>: Mamdani model

M<sub>2</sub>: Takagi – Sugeno–Kang model

M<sub>3</sub>: Kosko's additive model (SAM)

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

- (1) Only M<sub>1</sub> and M<sub>2</sub>
- (2) Only M<sub>2</sub> and M<sub>3</sub>
- (3) Only M<sub>1</sub> and M<sub>3</sub>
- (4) M<sub>1</sub>, M<sub>2</sub>, and M<sub>3</sub>

Options 1. 1

2. 2
3. 3
4. 4

**Q.85** 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 : Marked For Review

Chosen Option : 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



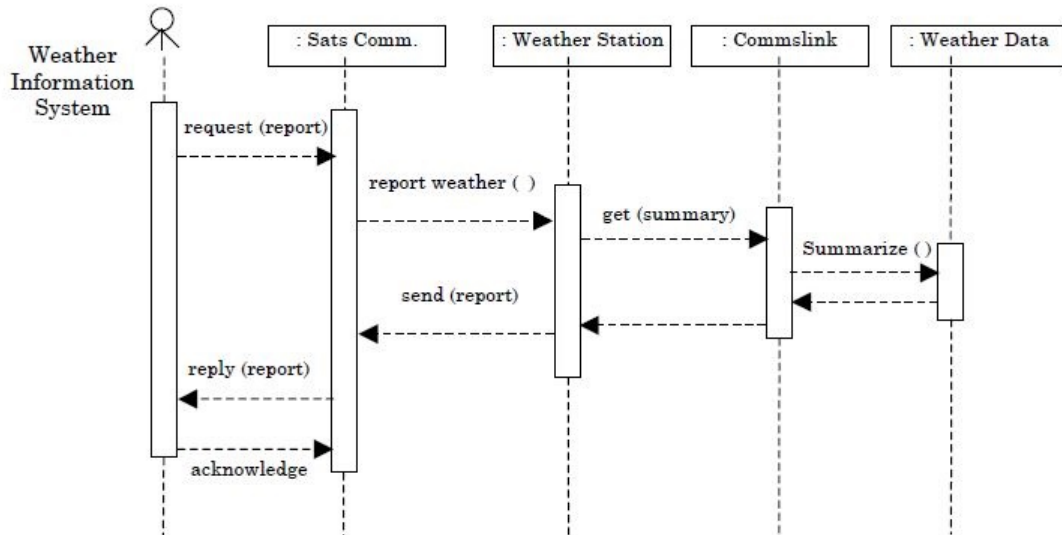


Figure 1

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



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

**Q.90** 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 : 2

Question Type : MCQ

Question ID : 61547510586

Option 1 ID : 61547541277

Option 2 ID : 61547541278

Option 3 ID : 61547541279

Option 4 ID : 61547541280

Status : Marked For Review

Chosen Option : 3

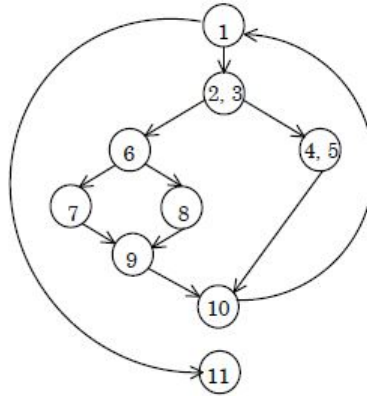


4. 4

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 : 1

Question Type : MCQ

Question ID : 61547510584

Option 1 ID : 61547541269

Option 2 ID : 61547541270

Option 3 ID : 61547541271

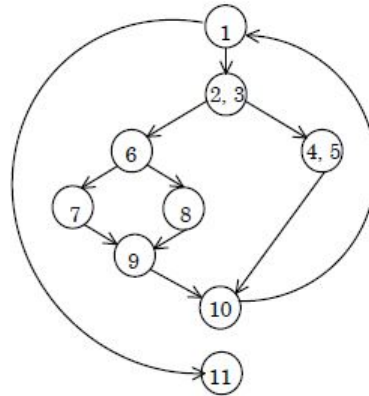
Option 4 ID : 61547541272

Status : Marked For Review

Chosen Option : 3

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 :



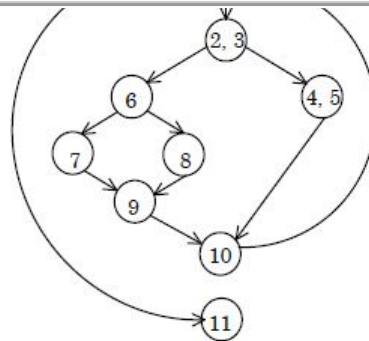
Flowgraph F

SubQuestion No : 94

Q.94 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



Flowgraph F

SubQuestion No : 95

Q.95 What is the cyclomatic complexity of flowgraph F?

- (1) 2 (2) 3  
(3) 4 (4) 5

Options 1. 1  
2. 2

Question Type : MCQ

Question ID : 61547510583

Option 1 ID : 61547541265

Option 2 ID : 61547541266

Option 3 ID : 61547541267

Option 4 ID : 61547541268

Status : Marked For Review

Chosen Option : 3

3. 3  
4. 4

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 functional 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 : 96

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

- (1)  $F' = \{A \rightarrow B, A \rightarrow C, BC \rightarrow D, D \rightarrow E\}$
- (2)  $F' = \{A \rightarrow BC, B \rightarrow D, D \rightarrow E\}$
- (3)  $F' = \{A \rightarrow B, A \rightarrow C, A \rightarrow D, D \rightarrow E\}$
- (4)  $F' = \{A \rightarrow B, A \rightarrow C, B \rightarrow D, C \rightarrow D, D \rightarrow E\}$

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 : 1

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 : 97

Q.97 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 : 2

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 : 98

Q.98 Identify the redundant functional dependency in  $F$

- (1)  $BC \rightarrow D$  (2)  $D \rightarrow E$   
 (3)  $A \rightarrow D$  (4)  $A \rightarrow BC$

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

Question Type : MCQ  
 Question ID : 61547510592  
 Option 1 ID : 61547541297  
 Option 2 ID : 61547541298  
 Option 3 ID : 61547541299  
 Option 4 ID : 61547541300

**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 : 99

Q.99 Assume that given table  $R$  is decomposed in two tables

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

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

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

Status : Answered  
Chosen Option : 1

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 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