

# National Testing Agency

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## Computer Applications and IT

<b>Group Number :</b>	1
<b>Group Id :</b>	190889147
<b>Group Maximum Duration :</b>	0
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<b>Show Attended Group? :</b>	No
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<b>Group Marks :</b>	480
<b>Is this Group for Examiner? :</b>	No

## Part A: General Knowledge

<b>Section Id :</b>	190889365
<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory

<b>Number of Questions :</b>	20
<b>Number of Questions to be attempted :</b>	20
<b>Section Marks :</b>	80
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889405
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 1 Question Id : 19088916942 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1**

Which of the following is the device used to measure the power and speed of the wind?

1. Avometer
2. Anemometer
3. Airometer
4. Aviontimeter

**Options :**

19088967661. 1

19088967662. 2

19088967663. 3

19088967664. 4

**Question Number : 2 Question Id : 19088916943 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 4 Wrong Marks : 1**

Optical fibre used the concept of which of the following?

1. Reflection
2. Refraction
3. Total internal reflection
4. Total internal refraction

**Options :**

- 19088967665. 1
- 19088967666. 2
- 19088967667. 3
- 19088967668. 4

**Question Number : 3 Question Id : 19088916944 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Yellow vein mosaic is the viral disease of which of the following plants?

- 1. Ladyfinger
- 2. Papaya
- 3. Sugarcane
- 4. Banana

**Options :**

- 19088967669. 1
- 19088967670. 2
- 19088967671. 3
- 19088967672. 4

**Question Number : 4 Question Id : 19088916945 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following organ(s) is affected by Mumps disease?

- 1. Entire body
- 2. Skin
- 3. Eye
- 4. Parotid

**Options :**

- 19088967673. 1
- 19088967674. 2
- 19088967675. 3



19088967676. 4

**Question Number : 5 Question Id : 19088916946 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the chemical name of vitamin B<sub>2</sub>?

1. Riboflavin
2. Calciferol
3. Pyridoxin
4. Niacin

**Options :**

19088967677. 1

19088967678. 2

19088967679. 3

19088967680. 4

**Question Number : 6 Question Id : 19088916947 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not the input unit of the computer?

1. Mouse
2. Keyboard
3. Screen
4. Scanner

**Options :**

19088967681. 1

19088967682. 2

19088967683. 3

19088967684. 4

**Question Number : 7 Question Id : 19088916948 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**



**Correct Marks : 4 Wrong Marks : 1**

The digital computer operates on which of the following principle?

1. Measurement
2. Calculation
3. Logical
4. Electrification

**Options :**

19088967685. 1

19088967686. 2

19088967687. 3

19088967688. 4

**Question Number : 8 Question Id : 19088916949 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The non-cooperation movement of Gandhiji was launched in which of the following year?

1. 1915
2. 1922
3. 1920
4. 1930

**Options :**

19088967689. 1

19088967690. 2

19088967691. 3

19088967692. 4

**Question Number : 9 Question Id : 19088916950 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

An Islamic revivalist movement named Wahabi movement was founded by which of the following person?

1. Sian Saheb
2. Syed Ahmed
3. Haji Shariat-Allah
4. DaduMian

**Options :**

19088967693. 1

19088967694. 2

19088967695. 3

19088967696. 4

**Question Number : 10 Question Id : 19088916951 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is considered as the "Magna Carta of England Education in India"?

1. Hunter education commission
2. Lord Macaulay's Minute
3. Wood's Despatch
4. Thomas Babington Macaulay

**Options :**

19088967697. 1

19088967698. 2

19088967699. 3

19088967700. 4

**Question Number : 11 Question Id : 19088916952 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following nutrient does not come under the ambit of 'macro-nutrients in Soil Health Card?

1. Nitrogen
2. Zinc
3. Phosphorous
4. Potassium

**Options :**

19088967701. 1

19088967702. 2

19088967703. 3

19088967704. 4

**Question Number : 12 Question Id : 19088916953 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Cole crops, root crops and legumes come under the ambit of which of the following?

1. Olericulture
2. Pomology
3. Viticulture
4. Arboriculture

**Options :**

19088967705. 1

19088967706. 2

19088967707. 3

19088967708. 4

**Question Number : 13 Question Id : 19088916954 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following?

1. Turf management
2. Arboriculture
3. Pomology
4. Viticulture

**Options :**

19088967709. 1

19088967710. 2

19088967711. 3

19088967712. 4

**Question Number : 14 Question Id : 19088916955 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year?

1. 2012-13
2. 2019-20
3. 2015-16
4. 2014-15

**Options :**

19088967713. 1

19088967714. 2

19088967715. 3

19088967716. 4

**Question Number : 15 Question Id : 19088916956 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The interaction of soils with living things, particularly plants are well known as which of the following?

1. Edaphology
2. Pedology
3. Soil zoology
4. Pedogenesis

**Options :**

19088967717. 1

19088967718. 2

19088967719. 3

19088967720. 4

**Question Number : 16 Question Id : 19088916957 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following systems has also incorporated social aspects in itself?

1. Landscaping
2. Permaculture
3. Horticulture
4. Forest gardening

**Options :**

19088967721. 1

19088967722. 2

19088967723. 3

19088967724. 4

**Question Number : 17 Question Id : 19088916958 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype?

1. Genetic manipulation
2. Genetic recombination
3. Genetic modification
4. Genetic hybridisation

**Options :**

19088967725. 1

19088967726. 2

19088967727. 3

19088967728. 4

**Question Number : 18 Question Id : 19088916959 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the focus of the participatory plant breeding program?

1. Scientists
2. Plants
3. Environment
4. Farmers

**Options :**

19088967729. 1

19088967730. 2

19088967731. 3

19088967732. 4

**Question Number : 19 Question Id : 19088916960 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place?

1. Manufactured agriculture
2. Modern agriculture
3. Industrial agriculture
4. Mechanistic agriculture

**Options :**

19088967733. 1

19088967734. 2

19088967735. 3

19088967736. 4

**Question Number : 20 Question Id : 19088916961 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Micro-irrigation fund of Rs. 5.000 crore has been placed with which of the following organization?

1. NABARD
2. IDBI
3. SBI
4. RRBs

**Options :**

19088967737. 1

19088967738. 2

19088967739. 3

19088967740. 4

## **Part B Core : Agricultural Statistics**

**Section Id :** 190889366

**Section Number :** 2

**Section type :** Online

<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	50
<b>Number of Questions to be attempted :</b>	50
<b>Section Marks :</b>	200
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889406
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 21 Question Id : 19088916962 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two unbiased dice are rolled once. The probability that the difference in digits on their upper surface is zero is

1.  $\frac{1}{3}$
2.  $\frac{1}{6}$
3.  $\frac{5}{6}$
4.  $\frac{1}{36}$

**Options :**

19088967741. 1

19088967742. 2

19088967743. 3

19088967744. 4

**Question Number : 22 Question Id : 19088916963 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two pure lines of maize have mean cob lengths of 24 and 8 cm respectively. The polygenes involved in this trait exhibit additive gene action. Crossing these two lines will produce a progeny with mean cob length of

1. 8 cm
2. 16 cm
3. 24 cm
4. 32 cm

**Options :**

19088967745. 1

19088967746. 2

19088967747. 3

19088967748. 4

**Question Number : 23 Question Id : 19088916964 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Additive genetic variance can be estimated by

A. Covariance between parents and offspring

B. Covariance among half sibs

Select the *most appropriate* option from the options given below:

1. A only
2. B only
3. Either A or B
4. Neither A nor B

**Options :**

19088967749. 1

19088967750. 2

19088967751. 3

19088967752. 4

**Question Number : 24 Question Id : 19088916965 Question Type : MCQ Option Shuffling : No**



**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Suppose, about 20 percent of people do not recognize the bitter taste of phenyl-thio-carbamate in a population. Inability to taste it is due to a single autosomal recessive gene. What is the frequency of the non-tasting gene, assuming the population to be in Hardy-Weinberg equilibrium?

1. 0.04
2. 0.16
3. 0.20
4. 0.45

**Options :**

19088967753. 1

19088967754. 2

19088967755. 3

19088967756. 4

**Question Number : 25 Question Id : 19088916966 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If X and Y are independent random variables with  $\text{Var}(X) = 2$ ,  $\text{Var}(Y) = 5$ , then  $\text{Var}(3X-Y)$  is

1. 1
2. 7
3. 11
4. 23

**Options :**

19088967757. 1

19088967758. 2

19088967759. 3

19088967760. 4

**Question Number : 26 Question Id : 19088916967 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If X and Y are two independent Poisson variates, then the conditional distribution of X given X+Y will be

1. Poisson
2. Negative Binomial
3. Binomial
4. Hypergeometric

**Options :**

19088967761. 1

19088967762. 2

19088967763. 3

19088967764. 4

**Question Number : 27 Question Id : 19088916968 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Ten soldiers visit a rifle range for two consecutive weeks. Their scores are  $(a_1, a_2, \dots, a_{10})$  and  $(b_1, b_2, \dots, b_{10})$ . The t-statistic for judging whether there is a significant difference in their performance should have t-distribution with degrees of freedom

1. 8
2. 9
3. 18
4. 19

**Options :**

19088967765. 1

19088967766. 2

19088967767. 3

19088967768. 4

**Question Number : 28 Question Id : 19088916969 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



If  $T_n$  is a sequence of estimates, then a sufficient condition for  $T_n$  to be consistent for  $\theta$  is

1.  $E(T_n) \rightarrow \theta$
2.  $Var(T_n) \rightarrow 0$
3. non-existent
4.  $E(T_n) \rightarrow \theta$  and  $Var(T_n) \rightarrow 0$

**Options :**

19088967769. 1

19088967770. 2

19088967771. 3

19088967772. 4

**Question Number : 29 Question Id : 19088916970 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For testing a simple hypothesis against a simple alternative, the Neyman-Pearson lemma provides a technique of getting

1. Least powerful test
2. most powerful test
3. uniformly most powerful test
4. uniformly most powerful unbiased test

**Options :**

19088967773. 1

19088967774. 2

19088967775. 3

19088967776. 4

**Question Number : 30 Question Id : 19088916971 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



The large sample efficiency of the median relative to the mean of a normal population is

1.  $\frac{1}{\pi}$
2.  $\frac{2}{\pi}$
3.  $\frac{\pi}{2}$
4.  $\pi$

**Options :**

19088967777. 1

19088967778. 2

19088967779. 3

19088967780. 4

**Question Number : 31 Question Id : 19088916972 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The mean and variance of a  $t$ -distribution are 0 and  $5/3$  respectively. The degrees of freedom of the distribution is

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

**Options :**

19088967781. 1

19088967782. 2

19088967783. 3

19088967784. 4

**Question Number : 32 Question Id : 19088916973 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which one of the following does not occur for a Census (complete enumeration)?

1. Non-sampling error only
2. Sampling error only
3. Both sampling and non-sampling errors
4. Neither sampling nor non-sampling errors.

**Options :**

19088967785. 1

19088967786. 2

19088967787. 3

19088967788. 4

**Question Number : 33 Question Id : 19088916974 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If a sample of size 6 is to be drawn from a population of size 120 in systematic sampling, then the sampling interval will be

1. 6
2. 12
3. 20
4. 114

**Options :**

19088967789. 1

19088967790. 2

19088967791. 3

19088967792. 4

**Question Number : 34 Question Id : 19088916975 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A sample of size  $n = 12$  is chosen using a simple random sampling procedure with replacement from a population of size  $N = 50$ . The population variance is estimated as 96. An estimate of the standard error of the sample mean is

1.  $\sqrt{8}$
2.  $\sqrt{38} \times \frac{2}{5}$
3. 8
4.  $4 \times \sqrt{6}$

**Options :**

19088967793. 1

19088967794. 2

19088967795. 3

19088967796. 4

**Question Number : 35 Question Id : 19088916976 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If we use a Latin square design to study the effects of  $m$  fertilizers on the yield of a certain variety of wheat, then the number of replications of each treatment and the number of plots required respectively are (where  $n$  is an arbitrary number)

1.  $n$  and  $m^2$
2.  $m$  and  $n^2$
3.  $m$  and  $m^2$
4.  $n$  and  $n^2$

**Options :**

19088967797. 1

19088967798. 2

19088967799. 3

19088967800. 4

**Question Number : 36 Question Id : 19088916977 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



In a balanced incomplete block design,  $v=15$ ,  $b=35$ ,  $r=7$ ,  $\lambda=1$ , the block size is

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

**Options :**

19088967801. 1

19088967802. 2

19088967803. 3

19088967804. 4

**Question Number : 37 Question Id : 19088916978 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If two levels of main plot treatment are increased, then the degrees of freedom for main plot error in a split-plot design with three replications will be increased by

1. 3
2. 4
3. 5
4. 10

**Options :**

19088967805. 1

19088967806. 2

19088967807. 3

19088967808. 4

**Question Number : 38 Question Id : 19088916979 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If  $8x - 10y + 66 = 0$  and  $40x - 18y - 214 = 0$  are the two regression lines; then the coefficient of correlation between  $x$  and  $y$  would be

1.  $3/5$
2.  $9/25$
3.  $-3/5$
4.  $-9/25$

**Options :**

19088967809. 1

19088967810. 2

19088967811. 3

19088967812. 4

**Question Number : 39 Question Id : 19088916980 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Conceptualization and rationalization of database can be done by

1. Data Manipulation Language (DML)
2. Query
3. Relational Schema
4. Data Definition Language (DDL)

**Options :**

19088967813. 1

19088967814. 2

19088967815. 3

19088967816. 4

**Question Number : 40 Question Id : 19088916981 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Following are the methods for reconstructing phylogenetic tree except

1. Maximum parsimony
2. Maximum likelihood
3. Neighbour Joining
4. Neural Network

**Options :**

19088967817. 1

19088967818. 2

19088967819. 3

19088967820. 4

**Question Number : 41 Question Id : 19088916982 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is a high throughout method of gene expression measurement?

1. Northern Blotting
2. Microarray
3. Quantitative PCR
4. Southern Blotting

**Options :**

19088967821. 1

19088967822. 2

19088967823. 3

19088967824. 4

**Question Number : 42 Question Id : 19088916983 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



What was the technique used by Watson and Crick to deduce the structure of DNA?

1. X-ray diffraction
2. NMR
3. Southern Hybridization
4. PCR

**Options :**

19088967825. 1

19088967826. 2

19088967827. 3

19088967828. 4

**Question Number : 43 Question Id : 19088916984 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which is the chemical group that lies at the 5' end of DNA?

1. Hydroxyl group
2. Methyl group
3. Phosphate
4. Benzyl group

**Options :**

19088967829. 1

19088967830. 2

19088967831. 3

19088967832. 4

**Question Number : 44 Question Id : 19088916985 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the strand of DNA that has the same sequence as RNA?

1. Coding strand
2. Complementary strand
3. Template
4. Antisense strand

**Options :**

19088967833. 1

19088967834. 2

19088967835. 3

19088967836. 4

**Question Number : 45 Question Id : 19088916986 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

BLOSUM matrices were designed to find

1. Expressed region of DNA
2. Promoter region of DNA
3. Conserved Region of Proteins
4. Stable Region of RNA

**Options :**

19088967837. 1

19088967838. 2

19088967839. 3

19088967840. 4

**Question Number : 46 Question Id : 19088916987 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Distant members of a protein sequence family can be found by

1. BLASTN
2. PSIBLAST
3. BLASTP
4. BLASTX

**Options :**

19088967841. 1

19088967842. 2

19088967843. 3

19088967844. 4

**Question Number : 47 Question Id : 19088916988 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is a protein 3D structure database?

1. Prosite
2. PDB
3. Swiss-Prot
4. RefSeq

**Options :**

19088967845. 1

19088967846. 2

19088967847. 3

19088967848. 4

**Question Number : 48 Question Id : 19088916989 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Which of the following is/are true regarding the global alignment algorithm?

- A. It compares sequences and gives the best overall alignment.
- B. It is better at finding motifs, especially for sequences that are different overall.
- C. It will return only the best matching segment for a given pair of sequences.

Select the most appropriate answer from the following:

- 1. A only
- 2. B only
- 3. C only
- 4. A and C only

**Options :**

19088967849. 1

19088967850. 2

19088967851. 3

19088967852. 4

**Question Number : 49 Question Id : 19088916990 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Paralogues are defined as

- 1. Homologous sequences in different species that share an ancestral gene
- 2. Homologous sequences that share little amino acid identity but share great structural similarity
- 3. Homologous sequences in the same species that arose through gene duplication
- 4. Homologous sequences in different species which have similar and often redundant functions

**Options :**

19088967853. 1

19088967854. 2

19088967855. 3

19088967856. 4

**Question Number : 50 Question Id : 19088916991 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Consider the two statements given below:

- A. The Levenshtein distance, defined between two strings of not necessarily equal length, is the minimal number of edit operations required to change one string into the other.
- B. The Hamming distance, defined between two strings of equal length, is the number of positions with matching characters.

Choose the correct answer from the options given below :

- 1. Both A and B
- 2. Only A
- 3. Only B
- 4. Neither A nor B

**Options :**

19088967857. 1

19088967858. 2

19088967859. 3

19088967860. 4

**Question Number : 51 Question Id : 19088916992 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Arrange the basic steps of comparative modeling in the correct order:

- A. The target is aligned with the template
- B. Iteration to correct errors (if any)
- C. A model is built
- D. Template selection and fold assignment are performed
- E. The model is evaluated

Choose the correct answer (correct order of steps) from the options given below :

- 1. D, B, C, E, A
- 2. D, A, C, E, B
- 3. A, D, C, B, E
- 4. A, D, C, E, B

**Options :**

19088967861. 1



19088967862. 2

19088967863. 3

19088967864. 4

**Question Number : 52 Question Id : 19088916993 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following method/ tool is used to validate the quality of protein structures?

1. WHAT IF
2. PROVE
3. PROSA
4. All of the above

**Options :**

19088967865. 1

19088967866. 2

19088967867. 3

19088967868. 4

**Question Number : 53 Question Id : 19088916994 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In object-oriented programming which of the following provides an important extension to the idea of reusability?

1. Encapsulation
2. polymorphism
3. Inheritance
4. Abstraction

**Options :**

19088967869. 1

19088967870. 2

19088967871. 3



19088967872. 4

**Question Number : 54 Question Id : 19088916995 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the special character classes (List I) in Perl with the content (List II):

List I	List II
Special characters class	Content
A. \w	I. Non whitespace characters
B. \W	II. Alphanumeric characters and _
C. \s	III. Neither alphanumeric characters nor _
D. \S	IV. Numeric digit
E. \d	V. Whitespace characters

Choose the correct answer from the options given below :

1. A - III, B - II, C - V, D - I, E - IV
2. A - II, B - III, C - V, D - I, E - IV
3. A - II, B - III, C - I, D - V, E - IV
4. A - III, B - II, C - V, D - IV, E - I

**Options :**

19088967873. 1

19088967874. 2

19088967875. 3

19088967876. 4

**Question Number : 55 Question Id : 19088916996 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is correct about database consistency?

Statement I: Database consistency is the property that every transaction sees a consistent database instance.

Statement II: Database consistency follows from transaction atomicity, isolation, and transaction consistency.

In light of the above statements, choose the correct answer from the options given below :

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

**Options :**

19088967877. 1

19088967878. 2

19088967879. 3

19088967880. 4

**Question Number : 56 Question Id : 19088916997 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In case of transactions in DBMS, it can be incomplete for the following reasons.

- A. A transaction can be aborted, or terminated unsuccessfully, by the DBMS because some anomaly arises during execution.
- B. If a transaction is aborted by the DBMS for some internal reason, it is automatically restarted and executed anew.
- C. The system may crash because of interruption on power supply while one or more transactions are in progress.
- D. A transaction may encounter an unexpected situation, may be due to inability to access some disk and decide to terminate itself.
- E. The transaction may be aborted due to simultaneous access to the record writing and reading.

Choose the correct answer from the options given below :

1. Reasons A, B and D are correct.
2. All given reasons are correct.
3. Reasons A and B are correct.
4. None of the reasons is correct.



**Options :**

19088967881. 1

19088967882. 2

19088967883. 3

19088967884. 4

**Question Number : 57 Question Id : 19088916998 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements :

Statement I: In most of the ambiguous context free grammars, it is possible to redesign an ambiguous grammar to make it an unambiguous grammar for the same language.

Statement II : An ambiguous grammars with certain tricks applied sometimes lead to more efficient parsers.

In light of the above statements, choose the correct answer from the options given below

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

**Options :**

19088967885. 1

19088967886. 2

19088967887. 3

19088967888. 4

**Question Number : 58 Question Id : 19088916999 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Who introduced the worlds first laptop computer in the market and when?

1. Hewlett-Packard in 1980
2. Compaq in 1984
3. Epson in 1981
4. Intel in 1979

**Options :**

19088967889. 1

19088967890. 2

19088967891. 3

19088967892. 4

**Question Number : 59 Question Id : 19088917000 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

Statement I: Types of ROM are: Masked ROM, PROM, EPROM and EEPROM.

Statement II: There are two types of RAMs: Static RAM, Dynamic RAM.

In light of the above statements, choose the correct answer from the options given below

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

**Options :**

19088967893. 1

19088967894. 2

19088967895. 3

19088967896. 4

**Question Number : 60 Question Id : 19088917001 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which HTML attribute can be used for defining inline styles?

1. style
2. styles
3. class
4. font

**Options :**

19088967897. 1

19088967898. 2

19088967899. 3

19088967900. 4

**Question Number : 61 Question Id : 19088917002 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which is the standard tool for designing Object-Oriented System at present?

1. Booch Modeling Language
2. Object Modeling Language
3. Unified Modeling Language
4. Class, responsibilities and collaborators language

**Options :**

19088967901. 1

19088967902. 2

19088967903. 3

19088967904. 4

**Question Number : 62 Question Id : 19088917003 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



There are two generic approaches for software designing - Top-down Design and Bottom-up Design. Read the following statements.

Statement I: Top-down design model starts with most specific and basic components. It proceeds with composing higher level of components by using basic or lower level components. It keeps creating higher level components until the desired system is not evolved as one single component.

Statement II: Bottom-up design takes the whole software system as one entity and then decomposes it to achieve more than one sub-system or component based on some characteristics. In light of the above statements, choose the correct answer from options given below

1. Both the statements are correct.
2. Both the statements are incorrect.
3. Statement I is correct and Statement II is incorrect.
4. Statement I is incorrect and Statement II is correct.

**Options :**

19088967905. 1

19088967906. 2

19088967907. 3

19088967908. 4

**Question Number : 63 Question Id : 19088917004 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A diagrammatic representation that illustrates the sequence of operations to solve a particular task in computer programming is called

1. Program
2. Algorithm
3. Flowchart
4. Codes

**Options :**

19088967909. 1

19088967910. 2

19088967911. 3

19088967912. 4



**Question Number : 64 Question Id : 19088917005 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For... loop is which type of statement?

1. Conditional statement
2. Input
3. Repetitive
4. Output

**Options :**

19088967913. 1

19088967914. 2

19088967915. 3

19088967916. 4

**Question Number : 65 Question Id : 19088917006 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Choose the correct option regarding searching a key in ordered list

1. Sequential search is faster than Binary search.
2. Sequential search is slower than Binary search.
3. Both sequential search and binary search have equal performance.
4. None of the above

**Options :**

19088967917. 1

19088967918. 2

19088967919. 3

19088967920. 4

**Question Number : 66 Question Id : 19088917007 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following are two popular computer networks?

1. Local Network and Wide Area Network
2. Local Area Network and Wide Area Network
3. Wide Area Network and Internet Network
4. None of the above

**Options :**

19088967921. 1

19088967922. 2

19088967923. 3

19088967924. 4

**Question Number : 67 Question Id : 19088917008 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What are the two main functions of operating system?

1. User/computer interface and Resource Management
2. Processes Management and File Management
3. Printing and Reading files
4. None of the above

**Options :**

19088967925. 1

19088967926. 2

19088967927. 3

19088967928. 4

**Question Number : 68 Question Id : 19088917009 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Which of the following statements are true about “Variable” in any computer programming language?

- A. It is an alpha-numeric name that represents value of data
- B. Name of memory address in which data/value is stored
- C. Name of user defined function
- D. Keyword in C programming language

Choose the correct answer from the options given below:

- 1. A and D only
- 2. B and C only
- 3. A and B only
- 4. B and C only

**Options :**

19088967929. 1

19088967930. 2

19088967931. 3

19088967932. 4

**Question Number : 69 Question Id : 19088917010 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following command is used to rename a file in LINUX?

- 1. `ren old_name new_name`
- 2. `cp old_name new_name`
- 3. `mv old_name new_name`
- 4. `rm old_name new_name`

**Options :**

19088967933. 1

19088967934. 2

19088967935. 3

19088967936. 4

**Question Number : 70 Question Id : 19088917011 Question Type : MCQ Option Shuffling : No**



**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Bus topology, Ring topology, star topology and Tree topology are major network topologies used in which of the following network.

1. Wide Area Network
2. Metropolitan Area Network
3. Internet Public Network
4. Local Area Network

**Options :**

19088967937. 1

19088967938. 2

19088967939. 3

19088967940. 4

## **Part C : Computer Applications and IT**

<b>Section Id :</b>	190889367
<b>Section Number :</b>	3
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	50
<b>Number of Questions to be attempted :</b>	50
<b>Section Marks :</b>	200
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	190889407
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 71 Question Id : 19088917012 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Some properties of Relational Database Management System (RDBMS) have been listed below.

- A. Data independence and efficient data access
- B. Data integrity and security
- C. Reduced number of user access
- D. Data administration
- E. Concurrent access and crash recovery
- F. Reduced application development time

Which property(ies) from the above is/ are wrongly listed?

- 1. C and F
- 2. E and F
- 3. B and C
- 4. Only C

**Options :**

- 19088967941. 1
- 19088967942. 2
- 19088967943. 3
- 19088967944. 4

**Question Number : 72 Question Id : 19088917013 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In a relational DBMS, the conceptual schema describes which relations stored in the database?

- 1. All relations
- 2. Some of the relations
- 3. Relations with primary key only.
- 4. Relations with foreign keys only.

**Options :**

- 19088967945. 1



19088967946. 2

19088967947. 3

19088967948. 4

**Question Number : 73 Question Id : 19088917014 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In DBMS, which statement is *incorrect* when we talk about physical schema?

1. It specifies additional storage details.
2. It summarizes how the relations described in the conceptual schema are actually stored on secondary storage devices such as disks and tapes.
3. Decisions about the physical schema are based on an understanding of how the data is typically deleted.
4. It decides the type of file organizations to use to store the relations, and create auxiliary data structures.

**Options :**

19088967949. 1

19088967950. 2

19088967951. 3

19088967952. 4

**Question Number : 74 Question Id : 19088917015 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



What is the role of a Database Administrator (DBA)?

- A. To manage DBMS for an enterprise
- B. To develop applications that use DBMS functionality to access and manipulate data
- C. To design schemas and provide security of database
- D. To restore the system after its failure
- E. To tune the database periodically to meet changing user needs

Choose the *correct* answer from the options given below:

- 1. A, B, C, D and E
- 2. A, C and D
- 3. B only
- 4. A, C, D and E.

**Options :**

19088967953. 1

19088967954. 2

19088967955. 3

19088967956. 4

**Question Number : 75 Question Id : 19088917016 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is correct in case of locking mechanism in DBMS?

- A. A locking protocol is a set of rules to be followed by some transactions and enforced by the DBMS.
- B. In order to ensure that even though actions of several transactions might be interleaved, the net effect is identical to executing all transactions in some serial order.
- C. It is used to control access to database objects.
- D. Shared locks on an object can be held by two different transactions at the same time.
- E. An exclusive lock on an object ensures that no other transaction holds *any* lock on this object.

Choose the *correct* answer from the options given below:

- 1. A only
- 2. B only
- 3. B, C, D and E
- 4. A, B, C, D and E

**Options :**

19088967957. 1

19088967958. 2

19088967959. 3

19088967960. 4

**Question Number : 76 Question Id : 19088917017 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The bottom-up parsing method is also called

- 1. Predictive parsing
- 2. Shift reduce parsing
- 3. Recursive descent parsing
- 4. Lexeme

**Options :**

19088967961. 1

19088967962. 2

19088967963. 3



19088967964. 4

**Question Number : 77 Question Id : 19088917018 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following symbol table implementations has the minimum access time?

1. Self-organizing list
2. Linear
3. Hash table
4. Search tree

**Options :**

19088967965. 1

19088967966. 2

19088967967. 3

19088967968. 4

**Question Number : 78 Question Id : 19088917019 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Read the following statements related to **token** in Compiler construction.

- A. A token is a pair consisting of a token name and an optional attribute value.
- B. The token name is an abstract symbol representing a kind of lexical unit.
- C. A particular keyword, or a sequence of input characters denoting an identifier.
- D. The token names are the input symbols that the parser processes.

In light of the above statements, choose the *correct* answer from the options given below

1. A and B only
2. A, B and C
3. A, B, C and D
4. A and C only

**Options :**

19088967969. 1

19088967970. 2

19088967971. 3

19088967972. 4

**Question Number : 79 Question Id : 19088917020 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Consider the following statements regarding finite automata in compiler construction.

A. Finite automata are recognizers. They simply say "yes" or "no" about each possible input string.

B. NFAs have no restrictions on the labels of their edges. A symbol can label several edges out of the same state.

C. DFAs have, for each state, and for each symbol of its input alphabet exactly two edges with that symbol leaving that state.

Choose the *correct* answer from the options given below:

1. All are correct statements.
2. A and C are correct.
3. A and B are correct.
4. B and C are correct.

**Options :**

19088967973. 1

19088967974. 2

19088967975. 3

19088967976. 4

**Question Number : 80 Question Id : 19088917021 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Consider the following statements regarding context-free grammar in compiler construction.

Statement I: An Ambiguity is present in grammar when some terminal strings have more than one parse trees.

Statement II: An Ambiguity is present in the grammar when it has two or more leftmost derivations but only one rightmost derivation.

Choose the *correct* answer from the following

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

**Options :**

19088967977. 1

19088967978. 2

19088967979. 3

19088967980. 4

**Question Number : 81 Question Id : 19088917022 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The fundamental building block of all digital logic circuits is

1. gate
2. flip-flop
3. bit
4. byte

**Options :**

19088967981. 1

19088967982. 2

19088967983. 3

19088967984. 4

**Question Number : 82 Question Id : 19088917023 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** It is an interconnected set of gates whose output at any time is a function only of the input at that time.

**Statement II:** It consists of a number of binary inputs and binary outputs.

By reading the above two statements, can you guess what is it talking about?

1. Gates
2. Gated network
3. Truth table
4. A combinational circuit

**Options :**

19088967985. 1

19088967986. 2

19088967987. 3

19088967988. 4

**Question Number : 83 Question Id : 19088917024 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match **List I** with **List II**

List I	List II
A. Input device	I. Router
B. Output device	II. Monitor
C. Web browser	III. Powerpoint
D. Software	IV. Opera
E. Network Device	V. Mouse

Choose the **correct** answer from the options given below:

1. A -V, B -II, C -IV, D -III, E -I
2. A -V, B -III, C -IV, D -II, E -I
3. A -IV, B -II, C -V, D -III, E -I
4. A -V, B -IV, C -II, D -III, E -I

**Options :**

19088967989. 1



19088967990. 2

19088967991. 3

19088967992. 4

**Question Number : 84 Question Id : 19088917025 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following Integrated Circuits contain up to 10 transistors or a few gates within a single package such as AND, OR and NOT gates?

1. Very-Large-Scale Integration (VLSI)
2. Large-Scale Integration (LSI)
3. Medium-Scale Integration (MSI)
4. Small-Scale Integration (SSI)

**Options :**

19088967993. 1

19088967994. 2

19088967995. 3

19088967996. 4

**Question Number : 85 Question Id : 19088917026 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I	List II
A. 5th generation computers	I. First generation computer
B. Artificial intelligence	II. A computer with a high level of performance as compared to a general-purpose computer
C. Micro computers	III. Massively parallel computing and logic programming
D. Super computers	IV. Intelligence demonstrated by machines
E. ENIAC	V. A small, relatively inexpensive computer with a microprocessor as its central processing unit (CPU)

Choose the correct answer from the options given below:

1. A - I, B - IV, C - V, D - II, E - III
2. A - III, B - IV, C - V, D - II, E - I
3. A - III, B - V, C - IV, D - II, E - I
4. A - III, B - IV, C - V, D - I, E - II

**Options :**

19088967997. 1

19088967998. 2

19088967999. 3

19088968000. 4

**Question Number : 86 Question Id : 19088917027 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What for “color:red” is used in Cascading Style Sheets (CSS)?

1. Selector
2. Rule
3. Declaration
4. Value

**Options :**

19088968001. 1

19088968002. 2

19088968003. 3



19088968004. 4

**Question Number : 87 Question Id : 19088917028 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following attributes is used to specify elements to bind style rules to?

1. class
2. id
3. tag
4. All of the above

**Options :**

19088968005. 1

19088968006. 2

19088968007. 3

19088968008. 4

**Question Number : 88 Question Id : 19088917029 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Who is said to be the father of World Wide Web (WWW)?

1. Robert Cailliau
2. Tim Thompson
3. Charles Babbage
4. Tim Berners-Lee

**Options :**

19088968009. 1

19088968010. 2

19088968011. 3

19088968012. 4

**Question Number : 89 Question Id : 19088917030 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements, related to Java Server Pages (JSP) programming language :

**Statement I:** Sessions can be shut down programmatically or they can time out according to a configurable period of inactivity.

**Statement II:** The session API in JSP provides a mean for objects to know when they have been bound or unbound from a session.

In light of the above statements, choose the *correct* answer from the options given below

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

**Options :**

19088968013. 1

19088968014. 2

19088968015. 3

19088968016. 4

**Question Number : 90 Question Id : 19088917031 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the correct output for the following JavaScript code:

```
int num = 7;
if(num > 7)
{
    document.write(7);
}
else
{
    document.write(num);
}
```

1. 5
2. 7
3. 0
4. Error



**Options :**

- 19088968017. 1
- 19088968018. 2
- 19088968019. 3
- 19088968020. 4

**Question Number : 91 Question Id : 19088917032 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements

**Statement I:** In Software Engineering, transitional aspect such as portability, interoperability, reusability and adaptability are important when the software is moved from one platform to another.

**Statement II:** Portability options become very important when a developer moves from one organization to another.

In light of the above statements, choose the *correct* answer from the options given below

1. Both the statements are true.
2. Statement I is true but Statement II is false.
3. Statement I is false but Statement II is true.
4. Both the statements are false.

**Options :**

- 19088968021. 1
- 19088968022. 2
- 19088968023. 3
- 19088968024. 4

**Question Number : 92 Question Id : 19088917033 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Consider the following statements regarding System Analysis

A. A roadmap of development plan is prepared to bring up the best software model suitable for the project.

B. It includes understanding of software product limitations, learning system related problems or changes to be done in existing systems beforehand, identifying and addressing the impact of project on organization and personnel etc.

C. The project team analyzes the scope of the project and plans the schedule and resources accordingly.

Choose the *correct* answer from the options given below:

1. A and B only
2. A and C only
3. All are correct.
4. All are incorrect.

**Options :**

19088968025. 1

19088968026. 2

19088968027. 3

19088968028. 4

**Question Number : 93 Question Id : 19088917034 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



The need of software engineering arises because of higher rate of change in user requirements and environment on which the software is working. Some of the reasons for software engineering is listed below:

- A. Large software
- B. Scalability
- C. Climate Management
- D. Cost
- E. Dynamic Nature
- F. Quality Management

What are the *incorrect* reasons from the above:

1. All are incorrect.
2. A, B and C are incorrect.
3. C is incorrect.
4. C and E is incorrect.

**Options :**

- 19088968029. 1
- 19088968030. 2
- 19088968031. 3
- 19088968032. 4

**Question Number : 94 Question Id : 19088917035 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Software Re-Engineering Process decides what to re-engineer - whole software or a part of it. This process includes the following:

- A. Perform Reverse Engineering, in order to obtain specifications of existing software.
- B. Restructure Program if required. For example, changing function-oriented programs into object-oriented programs.
- C. Redevelop the whole software with new platform and upgrades.
- D. Re-structure data if required.
- E. Apply Forward engineering concepts in order to get re-engineered software.

Choose the *correct* answer from the options given below:

- 1. A, B and D only
- 2. All are correct.
- 3. A, B, C and D are correct.
- 4. A, B, D and E are correct.

**Options :**

19088968033. 1

19088968034. 2

19088968035. 3

19088968036. 4

**Question Number : 95 Question Id : 19088917036 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Read below the two statements about waterfall model of software engineering:

**Statement I:** Waterfall model is the simplest model of software development paradigm. All the phases of SDLC will function one after another in linear manner.

**Statement II:** This means, when the first phase is about to finish, the second phase can start.

- 1. Both Statement I and Statement II are true
- 2. Both Statement I and Statement II are false
- 3. Statement I is true but Statement II is false
- 4. Statement I is false but Statement II is true

**Options :**

19088968037. 1



19088968038. 2

19088968039. 3

19088968040. 4

**Question Number : 96 Question Id : 19088917037 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is true on type of network services?

A. Connection-oriented and connectionless-oriented services

B. Wired oriented service and Wireless oriented services

1. only A is correct
2. only B is correct
3. Both A and B are correct
4. Both A and B are incorrect

**Options :**

19088968041. 1

19088968042. 2

19088968043. 3

19088968044. 4

**Question Number : 97 Question Id : 19088917038 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the following on vulnerability of network topology of local area network.

List I	List II
A. Bus	I. Failure of main hub
B. Star	II. Failure of main cable
C. Ring	III. Failure of core/root hub
D. Hierarchy/Tree	IV. Failure of any node connector

Choose the correct answer from the options given below:

1. A - I, B -II , C - III, D - IV
2. A -II , B -I , C -III , D - IV
3. A - II, B - I, C -IV , D - III
4. A - II, B - III, C -I , D -IV

**Options :**

19088968045. 1

19088968046. 2

19088968047. 3

19088968048. 4

**Question Number : 98 Question Id : 19088917039 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Choose correct order of 7 layered OSI reference model of various layers of network from the following

- A. Physical
- B. Data link
- C. Network
- D. Transport
- E. Session
- F. Application
- G. Presentation

Choose the *correct* answer from the options given below

1. A, B, C, D, E, F, G
2. A, E, F, B, C, D, G
3. G, F, D, E, C, B, A
4. A, B, C, D, E, G, F

**Options :**

- 19088968049. 1
- 19088968050. 2
- 19088968051. 3
- 19088968052. 4

**Question Number : 99 Question Id : 19088917040 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is host of IP address of C-Class network in internet netting?

1. 1.0.0.0 to 127.255.255.255
2. 128.0.0. to 191.255.255.255
3. 192.0.0.0 to 223.255.255.255
4. 244.0.0.0 to 239.255.255.255

**Options :**

- 19088968053. 1

19088968054. 2

19088968055. 3

19088968056. 4

**Question Number : 100 Question Id : 19088917041 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following device converts analog signal to digital signal and vice-versa ?

1. Switch
2. Router
3. Modem
4. Firewall

**Options :**

19088968057. 1

19088968058. 2

19088968059. 3

19088968060. 4

**Question Number : 101 Question Id : 19088917042 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two processes would stay blocked forever and no more work would ever be done, is called

1. Event Counter
2. Critical Section
3. Disabling Interrupt
4. Deadlock

**Options :**

19088968061. 1

19088968062. 2

19088968063. 3

19088968064. 4



**Question Number : 102 Question Id : 19088917043 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In operating system, Round Robin, Priority, Multiple queue, Shortest job, Policy driven are

1. Processing Techniques
2. Job Scheduling Techniques
3. Memory Management Techniques
4. Message Passing Techniques

**Options :**

19088968065. 1

19088968066. 2

19088968067. 3

19088968068. 4

**Question Number : 103 Question Id : 19088917044 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match List I with List II

List I	List II
A. Multithreading	I. Enables single PC or server to simultaneously use multiple operating system
B.Virtual Machine	II. Splitting jobs into sub-jobs and running concurrently
C. Distributed system	III. Permits only one process to perform against a resource at a time
D. Mutual exclusion	IV. Cluster of computers each with its own main memory, secondary memory and I/O modules

Choose the correct answer from the options given below:

1. A - IV, B - II, C - I, D - III
2. A - III, B - I, C - II, D - IV
3. A - I, B - II, C - III, D - IV
4. A - II, B - I, C - IV, D - III

**Options :**

19088968069. 1

19088968070. 2

19088968071. 3

19088968072. 4

**Question Number : 104 Question Id : 19088917045 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Consider the following statements regarding I/O buffering in operating system.

[C is computational time, T is time required to input one block buffer]

A. If  $C \leq T$  then single buffering device would have higher speed than double buffering device

B. If  $C > T$  then double buffering device would have improvement over single buffering device

C. If  $C > T$  then single buffering device would have higher speed than double buffering device

D. If  $C \geq T$  then double buffering device would have improvement over single buffering device

Select the *correct answer* from the options given below.

1. A and B only
2. B and C only
3. C and D only
4. A and D only

**Options :**

19088968073. 1

19088968074. 2

19088968075. 3

19088968076. 4

**Question Number : 105 Question Id : 19088917046 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**



Choose the correct statement regarding LINUX command 'Chmod 555'

1. Write and Execute permission to owner, group and others
2. Write and Read permission to owner, group and others
3. Read and Execute permission to owner, group and others
4. Write, Read and Execute permission to owner, group and others

**Options :**

19088968077. 1

19088968078. 2

19088968079. 3

19088968080. 4

**Question Number : 106 Question Id : 19088917047 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Bundling data and methods that work within one unit is defined as a mechanism of restricting the direct access to some components of an object. This concept in object-oriented programming is called \_\_\_\_\_.

1. Encapsulation
2. Inheritance
3. Polymorphism
4. Abstract

**Options :**

19088968081. 1

19088968082. 2

19088968083. 3

19088968084. 4

**Question Number : 107 Question Id : 19088917048 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which type of inheritance is in the following code?

```
class Vehicle:  
  
    def f1(self): print("Function of Vehicle class.")  
  
class Car: public Vehicle  
  
    def f2(self): print("Function of Car class.")  
  
class Bus:public Vehicle  
  
    def f3(self): print("Function of Bus class.")
```

1. Simple inheritance
2. Multiple inheritance
3. Multi-level inheritance
4. Hybrid inheritance

**Options :**

- 19088968085. 1
- 19088968086. 2
- 19088968087. 3
- 19088968088. 4

**Question Number : 108 Question Id : 19088917049 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In C, if `int * x` is declared as an integer pointer variable, what will be the output of the following statement ?

```
printf(" x variable: %x\n", x );
```

1. Value of x
2. Memory address of x
3. Value of square of x
4. Zero

**Options :**

- 19088968089. 1
- 19088968090. 2
- 19088968091. 3



19088968092. 4

**Question Number : 109 Question Id : 19088917050 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Classes in object oriented programming are useful because it

- A. permits data to be hidden from other classes
- B. removes data from memory when not in use
- C. bring together all aspects of an entity in one place
- D. can closely model objects in the real world

Select the *correct answer* from the following options.

- 1. A, B, C, D
- 2. A, B, D
- 3. A, C, D
- 4. B, C, D

**Options :**

19088968093. 1

19088968094. 2

19088968095. 3

19088968096. 4

**Question Number : 110 Question Id : 19088917051 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the following regarding object-oriented programming

List I	List II
A. Encapsulation	I. Structure of methods and attributes
B. Inheritance	II. Instance of class
C. Polymorphism	III. Functions
D. Class	IV. Single structure contains both data and functions
E. Methods	V. Many methods with same name
F. Object	VI. Class derived from another class

Choose the **correct** answer from the options given below:

1. A -I , B -III , C -II , D -V , E-VI, F-IV
2. A - III, B -I , C - IV, D - VI, E-II, F-V
3. A -I , B -II , C -III , D -VI, E-V, F-IV
4. A -IV , B -VI , C - V, D - I, E - III, F – II

**Options :**

- 19088968097. 1
- 19088968098. 2
- 19088968099. 3
- 19088968100. 4

**Question Number : 111 Question Id : 19088917052 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is characteristics of stack?

1. Last-In and Last-Out
2. Last-In and First-Out
3. First-In and First-Out
4. First-In and Last-Out

**Options :**

- 19088968101. 1
- 19088968102. 2
- 19088968103. 3
- 19088968104. 4

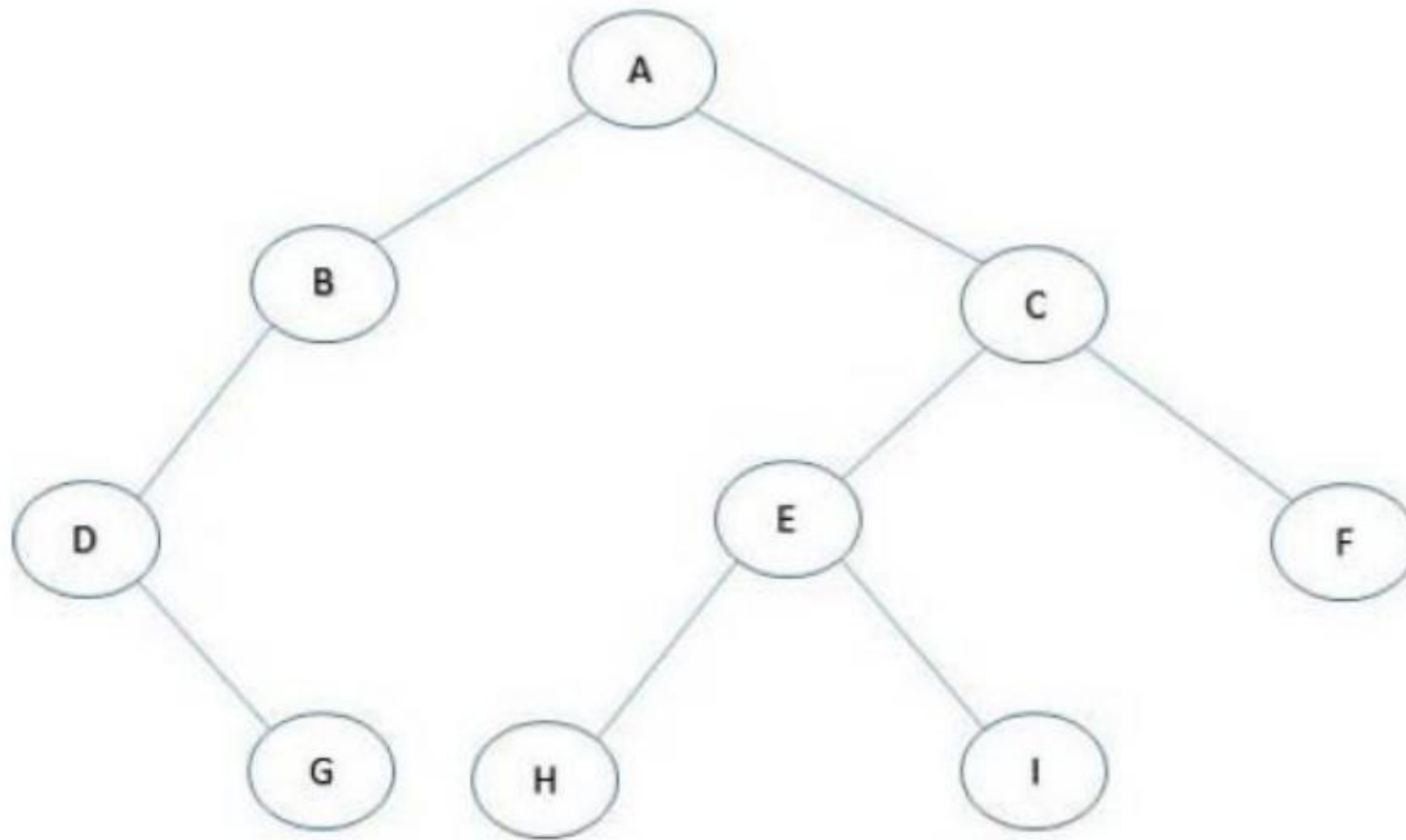


Question Number : 112 Question Id : 19088917053 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is **In-order** tree traversal of the tree given below ?



1. ABDGCEHIF
2. DGBAHEICF
3. GDBHIEFCA
4. None of these

**Options :**

19088968105. 1

19088968106. 2

19088968107. 3

19088968108. 4

Question Number : 113 Question Id : 19088917054 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following is the correct order for **Pre-order** tree traversal algorithm?

- A. Visit the root
- B. Traverse the left subtree
- C. Traverse the right subtree

- 1. A, B, C
- 2. B, A, C
- 3. B, C, A
- 4. C, A, B

**Options :**

- 19088968109. 1
- 19088968110. 2
- 19088968111. 3
- 19088968112. 4

**Question Number : 114 Question Id : 19088917055 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Match the following sorting algorithms with their computational efficiency

List I	List II
A. Quick sort	I. $O(n(\log n)^2)$
B. Bubble sort	II. $O(n \log n)$
C. Shell sort	III. $O(n^2)$

Choose the **correct** answer from the options given below:

- 1. A -II , B - I, C -III
- 2. A - III , B -I , C -II
- 3. A -I , B - II, C -III
- 4. A - II , B -III , C -I

**Options :**

- 19088968113. 1
- 19088968114. 2
- 19088968115. 3



19088968116. 4

**Question Number : 115 Question Id : 19088917056 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following statements are true regarding spanning tree?

A.  $F$  is subgraph of  $G$  containing all the nodes of  $G$

B.  $F$  is an ordered forest containing trees  $T_1, T_2, T_3 \dots T_n$

C.  $T_i$  contains all nodes that are reachable in  $G$  from the root of  $T_i$  and are not contained in  $T_j$  for  $j < i$

D.  $T_i$  contains all nodes that are reachable in  $G$  from the root of  $T_i$  and are not contained in  $T_j$  for  $j > i$

Choose the correct answer from the options given below:

1. A, B and C only
2. A, B and D only
3. A, B, C and D
4. A and B only

**Options :**

19088968117. 1

19088968118. 2

19088968119. 3

19088968120. 4

**Question Number : 116 Question Id : 19088917057 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The three basic principles of design of experiments are

- A. Replication
- B. Randomization
- C. Local control

Which of these are adopted in a Latin square design

- 1. A and B only
- 2. B and C only
- 3. A and C only
- 4. A, B and C

**Options :**

- 19088968121. 1
- 19088968122. 2
- 19088968123. 3
- 19088968124. 4

**Question Number : 117 Question Id : 19088917058 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A city consists of 5000 households. It is decided to take a random sample of 15% households to assess the effectiveness of a family planning programme. For this study, it suffices to have a sampling frame of

- 1. 750 households only
- 2. more than 750 households
- 3. all the 5000 households
- 4. a random sample of 750 households

**Options :**

- 19088968125. 1
- 19088968126. 2
- 19088968127. 3
- 19088968128. 4

**Question Number : 118 Question Id : 19088917059 Question Type : MCQ Option Shuffling : No**



**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If  $r$  is the correlation coefficient between  $X$  and  $Y$ , then the correlation coefficient between  $2X$  and  $-2Y$  is

1.  $r$
2.  $-r$
3.  $\sqrt{2}r$
4.  $-\sqrt{2}r$

**Options :**

- 19088968129. 1
- 19088968130. 2
- 19088968131. 3
- 19088968132. 4

**Question Number : 119 Question Id : 19088917060 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The point of intersection of the two kinds of ogives determines the

1. first quartile
2. second quartile
3. third quartile
4. fourth quartile

**Options :**

- 19088968133. 1
- 19088968134. 2
- 19088968135. 3
- 19088968136. 4

**Question Number : 120 Question Id : 19088917061 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A driver covers a distance of 400 km from town A to town B by car at a speed of 80 km per hour. He returns at a speed of 100 km per hour. The mean speed during the trip is

1. 180 km per hour
2. 90 km per hour
3.  $88\frac{8}{9}$  km per hour
4. 20 km per hour

**Options :**

19088968137. 1

19088968138. 2

19088968139. 3

19088968140. 4