

PREVIEW QUESTION BANK

Module Name : Bioinformatics-ENG
Exam Date : 09-Jul-2023 Batch : 14:30-16:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	2001	Which one of the following is not one of the features of parliamentary form of government? 1. Majority party rule 2. Collective Responsibility 3. Integrated and Independent Judiciary 4. Dissolution of the lower house A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	2002	Which of the following term implies that 'India is a neither a dependency nor a dominion of any other nation'? 1. Socialist 2. Sovereign 3. Secular 4. Democratic A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	2003	Which of the following form the maximum water composition on the earth's surface? 1. Oceans 2. Ice caps 3. Glaciers 4. Lakes A1 : 1 A2 : 2	4.0	1.00

A3 : 3

A4 : 4

Objective Question

4	2004	Which one of the following does not fall under the category of 'biomes'?	4.0	1.00
		1. Forest 2. Sky 3. Desert 4. Grassland		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

5	2005	IUCN publishes information about which of the following species as Red List of threatened species?	4.0	1.00
		1. Endangered Species 2. Vulnerable Species 3. Extinct Species 4. Rare Species		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

6	2006	Who was the first Indian to win an individual medal in Olympics?	4.0	1.00
		1. Milkha Singh 2. Karnam Malleshwari 3. P. T. Usha 4. K. D. Jadhav		
		A1 : 1		
		A2 : 2		
		A3 : 3		

		A4 : 4		
Objective Question				
7	2007	Who among the following reformers founded "Arya Samaj"? 1. Raja Ram Mohan Roy 2. Swami Dayananda Saraswati 3. Atmaram Pandurang 4. Ishwarchandra Vidyasagar A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
8	2008	What does "Triratna" mean in Buddhism? 1. Tripitaka 2. Buddha, Dhamma (dharma), Sangha 3. Satya, Ahimsa, Karuna 4. Sheel, Samadhi, Sangha A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
9	2009	Who started the Indian Reforms Association? 1. Narayan Guru 2. Swami Vivekananda 3. Krishna swami Aiyar 4. Keshav Chandra Sen A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

10	2010	Consider the following statements (A). UN General Assembly has declared 2023 as the international year of millets (B). Odisha govt. ropes in FICCI to promote millets globally (C). Odisha Millets Mission is a flagship programme of the Odisha government to revive millets in farms and on plates Choose the correct answer from the options given below: 1. (A) and (B) only. 2. (B) and (C) only. 3. (A) and (C) only. 4. (A), (B) and (C). A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

11	2011	Phomopsis blight occurs in which of the following crops? 1. Brinjal 2. Bajra 3. Sugarcane 4. Potato A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

12	2012	Endemic pests can be described as? 1. Pest occurs in a few specific area. 2. Pest occurs in same area, year after year. 3. Pest occurs frequently in current season in abundance. 4. Pest occurs in severe form. A1 : 1 A2 : 2 A3 : 3	4.0	1.00
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A4 : 4

Objective Question

13	2013	Which country is the largest producer of raw silk? 1. Japan 2. India 3. China 4. South Korea A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

14	2014	Transfer of Ownership is the example of which utility..... 1. Time utility 2. Place utility 3. Possession utility 4. Form utility A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

15	2015	What happens to the total number of chromosomes during mitotic cell division? 1. gets doubled 2. gets halved 3. remains the same 4. divides into four A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

16	2016	What is the minimum forest cover to be maintained as per the National Forest Policy, 1988? 1. One-half 2. One-third 3. One-fourth 4. Two-third A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

17	2017	Who among the following is known as the "Father of Agronomy"? 1. Stephen Hales 2. Gregor Johann Mendel 3. Peter Decresenzi 4. D N Walia A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

18	2018	Which of the following plant hormones helps in shoot elongation? 1. Auxin 2. Gibberellic acid 3. Absciscic acid 4. Cytokinin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

19	2019		4.0	1.00
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		Select from the following the chemical property of soil..... 1. Colour 2. pH 3. Texture 4. Structure A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

20	2020	The process of separating quality grains from chaff is called as..... 1. Winnowing 2. Threshing 3. Harvesting 4. Tilling A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

21	191001	The mean and the median of the ten numbers in increasing order 10, 22, 26, 29, 34, x, 42, 67, 70, y are 42 and 35 respectively, then y/x is equal to 1. $9/4$ 2. $7/2$ 3. $8/3$ 4. $7/3$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

22	191002		4.0	1.00
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If X follows Normal distribution with mean 4 and variance 100, then the distribution of $Y = \frac{1}{2} \left(\frac{X-4}{10} \right)^2$ is

1. Exponential with mean 4
2. Chi square with one degree of freedom
3. Gamma distribution with parameter 1/2
4. Normal with mean 4 and variance 10

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

23 191003

If the correlation coefficients of zero order in a set of 3 variates were equal to ρ each, then the multiple correlation R_{123}^2 is equal to

1. ρ
2. $\frac{2\rho^2}{1+\rho}$
3. $\frac{\rho^2}{1+\rho}$
4. +1

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

24 191004

X is a random variable with $EX = 3$ and $EX^2 = 13$. If Q be the probability of the event: $-2 \leq X \leq 8$, then which one of the following statements follows from Chebychev's inequality?

1. $Q \geq 0.84$
2. $Q \leq 0.84$
3. $Q \geq 0.36$
4. $Q \leq 0.16$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

4.0 1.00

Objective Question

25	191005	Let 4, 2, 2, 5, 1, 2, 4, 3, 2, 5 be a sample of size 10 from a population following Poisson (λ) distribution. The UMVUE of λ is 1. 40 2. 8 3. 4 4. 3 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

26	191006	Consider the following statements for a test of significance: (A). Size = 1 - P (Type I error) (B). Power = 1 - P (Type II error) (C). Power = P (Type II error) (D). Size = P (Type I error) Choose the correct answer from the options given below: 1. (A) and (B) only. 2. (C) and (D) only. 3. (A) and (C) only. 4. (B) and (D) only. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

27	191007		4.0	1.00
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Consider the 2 x 2 contingency table on two attributes A and B

	A ₁	A ₂
B ₁	10	20
B ₂	30	40

What is the value of χ^2 for testing the independence of the attributes A and B?

1. 0.79
2. 0.81
3. 0.83
4. 0.85

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

28 191008

4.0 1.00

Which of the following tests should be employed for deciding whether or not two samples come from the same skewed parent population?

- (A). Paired t-test
- (B). t-test
- (C). Run test
- (D). Sign test

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

29 191009

4.0 1.00

A test in which decision about H_0 is taken after each successive observation is known as

1. Bayes' test
2. Likelihood ratio test
3. Sequential probability ratio test
4. Student's ratio test

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

30 191010

4.0 1.00

The following ANOVA table is obtained for a two variable linear regression:

Source of variation	Degrees of freedom	Sum of squares
Regression	1	122.5
Residual	3	77.5
Total	4	200

The correlation between the regressor and the regressand is

1. 0.3875
2. 0.6125
3. 0.6225
4. 0.7826

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31 191011

4.0 1.00

The total number of second and third order interactions in 2^5 factorial experiment are

1. 20
2. 15
3. 10
4. 5

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

32	191012	Which one of the following is reduced by confounding in a factorial experiment? 1. Non-sampling error 2. Sampling error 3. Standard error 4. Experimental error A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

33	191013	The efficiency of SRSWOR with respect to SRSWR is (here N and n are population and sample sizes respectively) 1. $\frac{N-n}{N-1}$ 2. $\frac{N-1}{n-1}$ 3. $\frac{n-1}{N-1}$ 4. $\frac{N-1}{N-n}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

34	191014		4.0	1.00
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A simple random sample of size 10 is selected with replacement from a population of size 100. What is the expected number of unique elements in the sample?

1. $100 \times \left(\frac{99}{100}\right)^{10}$

2. $100 \times \left[1 - \left(\frac{99}{100}\right)^{10}\right]$

3. $100 \times \left(\frac{9}{10}\right)^{10}$

4. $100 \times \left(1 - \frac{99}{100}\right)^{10}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

35 191015

4.0 1.00

In large samples, with simple random sampling, the ratio estimator of the population mean is more precise than the sample mean. If suppose the correlation coefficient between X and Y, $\rho > 3/8$, then the relationship between C_x and C_y is (here, C_x and C_y are coefficients of variation of x and y respectively)

1. $C_y = C_x$

2. $C_y = 2C_x$

3. $3C_y = 4C_x$

4. $4C_y = 3C_x$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

36 191016

4.0 1.00

In families of three children, what is the probability of finding the oldest child to be a girl and the youngest, a boy?

1. $1/2$

2. $1/3$

3. $1/4$

4. $1/6$

A1 : 1

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
37	191017	A type of allelic interaction in which the phenotype of the heterozygote is outside the phenotypic limit of the corresponding homozygotes is called 1. Complete dominance 2. Incomplete dominance 3. Overdominance 4. Additive genes A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
38	191018	Yellow body colour in <i>Drosophila</i> is governed by a sex-linked recessive gene; wild-type colour is produced by its dominant allele. A sample from a Hardy-Weinberg population contained 1021 wild-type males, 997 wild-type females, and 3 yellow males. The percentage of gene pool represented by the yellow allele is estimated to be 1. 0.04 2. 0.16 3. 0.21 4. 0.29 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
39	191019		4.0	1.00

Let R be a relation schema and let X and Y be non-empty sets of attributes in R. We say that an instance r of R satisfies the following for every pair of tuples t_1 and t_2 in r:

If $t_1:X = t_2:X$, then $t_1:Y = t_2:Y$

The above is a kind of integrity constraint that generalizes the concept of a key called

1. No Dependency
2. Independency
3. Transitive Dependency
4. Functional Dependency

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40	191020		4.0	1.00
Neighbor-joining method is used for				
1. Carbohydrate Structure Prediction 2. Protein Structure Prediction 3. Phylogenetic Tree Construction 4. Primer Designing				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

41	191021		4.0	1.00
Which of the following is miRNA sequence database?				
1. EMBL 2. miRanda 3. miRBase 4. miRData				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question				
42	191022	RNA is made up of following molecules except 1. Phosphate 2. Pentose Sugar 3. Thymine 4. Uracil A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
43	191023	At what position of DNA, Phosphate is attached? 1. 1' 2. 2' 3. 3' 4. 5' A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
44	191024	Which of the following molecules takes part in splicing? 1. Pre-mRNA 2. tRNA 3. miRNA 4. siRNA A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
45	191025		4.0	1.00

		Dynamic Programming algorithm is used in 1. Protein-protein interaction network 2. Pairwise Alignment of nucleotide sequences 3. 2D Structure Prediction of protein 4. 3D Structure Prediction of protein A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
46	191026	In comparison to Position Specific Scoring Matrices (PSSM), Hidden Markov Model (HMM) is 1. Equally sensitive to detect homology 2. More sensitive to detect homology 3. Less sensitive to detect homology 4. Not able to detect homology A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
47	191027	Which of the following is a repository for 3D structure of macromolecules? 1. EMBL-Bank 2. RefSeq 3. PDB 4. Swiss-Prot A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
48	191028		4.0	1.00

Consider the following statements about BLOSUM (BLOCKS SUBstitution Matrix) matrices:

(A). It was first introduced by Henikoff and Henikoff.

(B). Local multiple alignments of more distantly related sequences were used to create BLOSUM.

(C). BLOSUM matrices are derived from PROSITE signatures of the BLOCKS database.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

49	191029	Given below are two statements: Statement (I): Orthologs are homologous sequences in different species that arose from a common ancestral gene during speciation. Statement (II): Paralogs are homologous sequences that arose by a mechanism such as gene duplication. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

50	191030		4.0	1.00
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Match **List-I** with **List-II**

List-I	List-II
(A). Geno3D	(I). A web-based GenBank sequence submission tool
(B). PAUP	(II). Comparative protein structure modelling server
(C). Rasmol	(III). Standard program for phylogenetic analysis
(D). BankIT	(IV). Multi-conformer docking program
(E). FRED	(V). Molecular viewer

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51 191031

4.0 1.00

Which of the following cannot be used for protein structure prediction by comparative modelling?

1. 3Djigsaw
2. ESyPred3D
3. Swiss-Model
4. MEGA

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

52 191032

4.0 1.00

Given below are two statements regarding methods for reconstructing phylogenetic trees:

Statement (I): The neighbour-joining method does not assume all sequences have the same constant rate of evolution over time, and this method is related to the concept of minimum evolution.

Statement (II): The Fitch-Margoliash method does not make assumptions of constant mutation rate, and this method produces a rooted ultrameric tree.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

53	191033	What is cout in C++? 1. Function 2. Object 3. Macro 4. Operator A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

54	191034	Given below are two statements: Statement (I): Techniques based on self-organizing maps (SOMs) which is a form of supervised neural network, can be used for analysis of microarray gene expression data. Statement (II): Self-organizing tree algorithm (SOTA) determines the number of clusters required in gene expression data analysis. In light of the above statements, choose the <i>most appropriate</i> 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.	4.0	1.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
55	191035	Which HTML Tag is used to enclose any number of Javascript statements in HTML document: 1. code Tag 2. script Tag 3. title Tag 4. body Tag A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
56	191036	Software products need perfective maintenance for which of the following reasons ? 1. To rectify bugs observed while the system is in use 2. When the customers need the product to run on new platforms 3. To support the new features that users want it to support 4. To overcome wear and tear caused by the repeated use of the software A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
57	191037	The algebraic function of the Exclusive-OR (XOR) operation is: (Where ' represents Complement Operation) 1. $F = A \cdot B$ 2. $F = A' B' + A B$ 3. $F = A' B + A B'$ 4. $F = A + B$ A1 : 1	4.0	1.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
58	191038	In ICAR-ERP, what does ERP stands for? 1. Entrepreneur Resource System 2. Enterprise Resource Planning 3. Enterprise Resilient Planning 4. Employee Response System A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
59	191039	The Python library used for drawing graphs, high-defined figures and charts is 1. TensorFlow 2. Pandas 3. Numpy 4. Matplotlib A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
60	191040	Which of the following is not a Big Data Analytics Tool: 1. Apache Hadoop 2. PHP 3. Mongo DB 4. Cassandra A1 : 1 A2 : 2	4.0	1.00

		A3 : 3		
		A4 : 4		

Objective Question

61	191041	The method that provides a simple, straightforward procedure for simplifying Boolean expressions is 1. Google Map 2. Karnaugh Map 3. Hash Map 4. Tree Map A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

62	191042	Following documents have an implicit structure or hierarchy: (A) HTML (B) XML (C) XHTML Choose the correct answer from the options given below: 1. (A), and (B) only 2. (A), and (C) only 3. (A), (B) and (C) 4. (B) and (C) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

63	191043	Which header file is required in C++ to use OOP? 1. assert.h 2. stdlib.h 3. iostream.h 4. stdio.h A1 : 1	4.0	1.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

64	191044	Which is the correct syntax of inheritance? 1. class base_classname :access derived_classname{ /*define class body*/ }; 2. class derived_classname : access base_classname{ /*define class body*/ }; 3. class derived_classname : base_classname{ /*define class body*/ }; 4. class base_classname : derived_classname{ /*define class body*/ }; A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

65	191045	An algorithm that runs in $O(1)$ time is the ____, $O(\log N)$ is ____, $O(N)$ is ____, and $O(N^2)$ is ____. 1. Best, Bad, Fair, Very Good 2. Bad, Fair, Very Good, Best 3. Best, Very Good, Fair, Bad 4. Bad, Very Good, Best , Fair A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

66	191046	There are several factors that affect the efficiency of lookup operations in a hash table. Which of the following is not one of those factors? 1. Number of elements stored in the hash table 2. Size of elements stored in the hash table 3. Number of buckets in the hash table 4. Quality of the hash function A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

67 191047

4.0

1.00

Goal	Threat
A. Confidentiality	I. Tampering with Data
B. Integrity	II. Denial of Service
C. Availability	III. Exposure of Data

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68 191048

4.0

1.00

Type of security measure that involves limiting the types of operations that a program can perform on a computer system is known as

1. Firewall
2. Intrusion Detection
3. Least Privilege
4. Data Masking

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69 191049

4.0

1.00

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

List-I	List-II
(A).The bits of the codeword are numbered consecutively, starting with bit 1 at the left end, bit 2 to its immediate right, and so on.	(I). Binary convolutional codes
(B).In a convolutional code, an encoder processes a sequence of input bits and generates a sequence of output bits.	(II). Hamming codes
(C). The linear block codes, which are often systematic too and operate on m bit symbols.	(III). Low-Density Parity Check codes.
(D). The linear block codes, in which each output bit is formed from only a fraction of the input bits.	(IV).Reed-Solomon codes

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

70	191050	Which of the following is NOT TRUE about Ring Topology of Computer Networks?	4.0	1.00
1. The data flows in an anti-clockwise direction. 2. The data flows in an endless loop. 3. It has no terminated end. 4. It is unidirectional.				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

71	1003601	In DNA, a hydroxyl group is present in ribose sugar at	4.0	1.00
1. 1' position 2. 2' position 3. 3' position 4. 4' position				

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
72	1003602	How many synonymous codons are available for coding the Leucine amino acid? 1. 3 2. 4 3. 6 4. 8 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
73	1003603	In bacteria, ribosome binding site at the 5' end of mRNA is known as 1. Shine-Dalgarno 2. Domains 3. Motifs 4. Operon A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
74	1003604		4.0	1.00

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

- (A). Free 3' hydroxyl (OH) group from the growing strand of DNA attacks the phosphate on the next base to be added
- (B). Free 5' hydroxyl (OH) group from the growing strand of DNA attacks the phosphate on the next base to be added
- (C). Free 2' hydroxyl (OH) group from the growing strand of DNA attacks the phosphate on the next base to be added
- (D). Pyrophosphate is released and the new base forms a phosphodiester bond with the growing strand of DNA

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

75	1003605	Which of the following molecules is having three dimensional structure? 1. mRNA 2. DNA 3. tRNA 4. miRNA A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

76	1003606		4.0	1.00
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Which of the following(s) is/are incorrect about mate pair and paired end library

- (A). Using paired-end reads, repeats can be ambiguously aligned in complex genomes
- (B). In Mate-paired library construction, large DNA fragments are circularized using internal adapters
- (C). Direction of sequencing in the case of mate pair is inward direction
- (D). Assembly of the small reads will be easy by using mate pair and paired end library

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

77	1003607	Which of the following NGS technology(s) use(s) emulsion PCR for template amplification?	4.0	1.00
		(A). Solexa Technology		
		(B). Solid		
		(C). Rosche 454		
		(D). Pacific Biosciences		
		Choose the correct answer from the options given below:		
		1. A only		
		2. B only		
		3. B and C only		
		4. B and D only		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

78	1003608		4.0	1.00
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In de-Bruijn Graph approach of genome assembly, which of the following(s) is/are correct

- (A). Reads are nodes
- (B). Overlaps are edges
- (C). Follow Eulerian Path
- (D). K-mers are used

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

79 1003609

4.0 1.00

Disdvantage(s) of using OLC approach for genome assembly is/are

- (A). Finding overlaps between reads are very difficult
- (B). Finding shortest Hamiltonian path is an NP problem
- (C). Not suitable for smaller genome
- (D). Algorithm requires heuristic approach

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

80 1003610

4.0 1.00

Which of the following assembler(s) do(es) not follow the OLC approach of genome assembly?

(A). Arachne

(B). Celera

(C). Velvet

(D). Ray

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

1. A only

2. B only

3. A and B only

4. C and D only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

81 1003611

4.0 1.00

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

(A). OLC approach of genome assembly follows Hamiltonian Path

(B). OLC approach of genome assembly follows Eulerian Path

(C). de-Bruijn graph based approach of genome assembly follows Eulerian Path

(D). de-Bruijn graph approach of genome assembly follows Hamiltonian Path

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

1. A only

2. B only

3. A and C only

4. B and D only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

82 1003612

4.0 1.00

Which of the following file format represents the aligned reads?

1. FASTA
2. BAM
3. FASTQ
4. VCF

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

83 1003613

4.0 1.00

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

List-I	List-II
(Book/Theory proposed/Characteristic, etc.)	(Author/Thinker/Name of Theory, etc.)
(A). Measure of Central Tendency	(I). Lack of Memory
(B). Sampling Distribution	(II). Continuous Variable
(C). Probability Density Function	(III). Mean
(D). Exponential distribution	(IV). t-distribution

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

84 1003614

4.0 1.00

Expected Ratio of segregation with no linkage in the cross type AaBbXAaBb is

1. 1:1:1:1
2. 3:1:3:1
3. 9:3:3:1
4. 9:3:1:1

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

85	1003615	In a large random mating population, product of the frequencies of homozygotes is equal to the 1. Frequency of heterozygote 2. Square of the frequency of heterozygote 3. Half of the Square of the frequency of heterozygote 4. One fourth of the Square of the frequency of heterozygote A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

86	1003616	Which of the following measures is used as the reliability to phenotypic value as a guide to breeding value of an individual? 1. Heritability 2. Repeatability 3. Genetic Correlation 4. Linkage Disequilibrium A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

87	1003617		4.0	1.00
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Which of the following statement(s) is/are true?

- (A). Broad sense heritability is the upper limit of narrow sense heritability
- (B). Narrow Sense Heritability is measured on the basis of genetic variance
- (C). Repeatability is the upper limit of heritability
- (D). Broad Sense Heritability is measured on the basis of additive variance

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

88	1003618	Which of the following measure(s) is/are suitable when one gene controls more than one trait?	4.0	1.00
1. Repeatability 2. Genetic correlation 3. Narrow sense heritability 4. Broad sense heritability				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

89	1003619	Average genetic gain per unit time due to selection for milk production can be predicted with the help of an estimate of	4.0	1.00
(A). Heritability (B). Repeatability (C). Selection Differential (D). Genetic Correlation				
Choose the correct answer from the options given below:				
1. A only 2. A and B only 3. A and C only 4. C and D only				

		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
90	1003620	The statement "In a large random mating population, gene and genotypic frequencies remain constant from generation to generation in the absence of systematic forces" is related with 1. Fisher's Fundamental Theorem 2. Hardy Weinberg Law 3. Law of Independent Assortment 4. Law of Segregation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
91	1003621	What is the correct order in OLC approach based genome assembly? (A). Building a layout (B). Finding the overlaps (C). Finding the consensus sequence Choose the correct answer from the options given below: 1. (A), (B), (C) 2. (A), (C), (B) 3. (B), (A), (C) 4. (B), (C), (A) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
92	1003622		4.0	1.00

Given below are two statements, one is labelled as Assertion (A) and other one labelled as Reason (R).

Assertion (A) : Resolving bubbles formed during the k-mer graph based genome assembly is an important step

Reason (R) : Resolving bubbles helps to resolve the problems of variants present in the genome

In light of the above statements, choose the *most appropriate* answer from the options given below .

1. Both (A) and (R) are correct and (R) is the correct explanation of (A).
2. Both (A) and (R) are correct but (R) is NOT the correct explanation of (A).
3. (A) is correct but (R) is not correct.
4. (A) is not correct but (R) is correct.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	1003623	Select one option from the following that can be a data security threat in database management systems. 1. Hardware problem 2. Leakage of privacy information 3. Data manipulation fraud 4. Data loss A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

94	1003624	Read the following statements about schedule in DBMS Statement (I): A schedule is a list of actions (reading, writing, aborting, or committing) from a set of transactions. Statement (II): The order in which two actions of a transaction T appear in a schedule must be the same as the order in which they appear in T. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. 1. Statement (I) is correct but Statement (II) is incorrect 2. Statement (I) is incorrect but Statement (II) is correct 3. Both Statement (I) and Statement (II) are correct 4. Both Statement (I) and Statement (II) are incorrect A1 : 1 A2 : 2	4.0	1.00
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		A3 : 3		
		A4 : 4		
Objective Question				
95	1003625	The way the DBMS handles concurrent executions is an important aspect of transaction management which is the subject of _____. 1. Transaction control 2. Execution control 3. Scheduler control 4. Concurrency control A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
96	1003626	Which of the following is not TRUE about the UniProtKB/Swiss-Prot sequence format? 1. The SQ line marks the beginning of the sequence data and gives a quick summary of its content. 2. The FT line provides a precise information for the annotation of the sequence data. 3. The // terminator line contains no data or comments and designates the end of an entry. 4. The RT line gives a sequential number to each reference citation in an entry. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
97	1003627	WEBIN is a web-based submission tool of 1. Uniprot 2. GenBank 3. EMBL 4. DDBJ A1 : 1 A2 : 2 A3 : 3	4.0	1.00

A4 : 4

Objective Question

98	1003628	Which of the following in not a protein sequence database? 1. TrEMBL 2. InterPro 3. PANDIT 4. Ensembl A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

99	1003629	Given below are two statements regarding databases of multiple sequence alignments: Statement (I): Pfam is a compilation of both multiple sequence alignments and profile HMMs of protein families. Statement (II): The main difference between Pfam-A and Pfam-B is that Pfam-A is automatically curated while Pfam-B is manually curated. In light of the above statements,choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

100	1003630		4.0	1.00
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Consider the following statements:

(A). Global alignment compares sequences and gives best overall alignment.

(B). Global alignments can return more than one matching segment for a given pair of sequences.

(C). Local alignment will return only the best matching segment for a given pair of sequences.

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

101 1003631

4.0 1.00

Match the BLAST programs (**List-I**) with their description (**List-II**)

List-I	List-II
Programs	Description
(A). blastx	(I). Compares six-reading frame translations of nucleotide query sequence against six-reading frame translations of nucleotide sequence database
(B). tblastx	(II). Compares protein query sequence against protein sequence database
(C). blastn	(III). Compares protein query sequence against six-reading frame translations of nucleotide sequence database
(D). tblastn	(IV). Compares six-reading frame translations of nucleotide query sequence against protein sequence database
(E). blastp	(V). Compares nucleotide query sequence against nucleotide sequence database

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

102	1003632	If the possible number of rooted trees is 105 for 'n' operational taxonomic units (OTUs), then the value of n is 1. 6 2. 3 3. 5 4. 4 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

103	1003633	Given below are statements regarding methods of constructing phylogenies from the sequence data: Statement (I): Cladistic method assumes that the members of a group share a common evolutionary history and are more closely related to members of the same group than to any other organisms. Statement (II): Unweighted Pair Group Method with Arithmetic Mean is one of the most widely used cladistic method. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

104	1003634	Given below are various statements regarding statistical evaluation of phylogenetic trees generated by different methods: (A). In bootstrapping phylogenies, sites are re-sampled without replacement to create many bootstrap replicate datasets. (B). Jackknifing is very similar to bootstrapping and differs only in the character re-sampling strategy. (C). Bootstrap proportions are the same as the confidence intervals. Choose the correct answer from the options given below: 1. A only 2. B only 3. A and C only 4. B and C only	4.0	1.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

105	1003635	Consider the following statements: (A). A monophyletic taxon includes the most recent common ancestor of a group of organisms, and all of its descendants. (B). A paraphyletic taxon includes the most recent common ancestor, but not all of its descendants. (C). A polyphyletic taxon does not include the common ancestor of all members of the taxon. Choose the correct answer from the options given below: 1. A only 2. A and B only 3. A and C only 4. A, B and C A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

106	1003636	Given below are two statements regarding phylogenetic trees: Statement (I): Rooted trees show the evolutionary relationship between taxa but do not identify the last common ancestor. Statement (II): Unrooted trees represent the divergence of a group of related species from their last common ancestor, the root, by successive branching events over time. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

1071003637

4.01.00

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

List-I	List-II
(A). Cladogram	(I). Depicts the amount of evolutionary change that has occurred along the different branches
(B). Phylogram	(II). Depicts the relative recentness of a common ancestry
(C). Dendrogram	(III). Depicts the times of divergence

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

1. (A) - (II), (B) - (III), (C) - (I)

2. (A) - (I), (B) - (III), (C) - (II)

3. (A) - (I), (B) - (II), (C) - (III)

4. (A) - (II), (B) - (I), (C) - (III)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

108	1003638	The Protein Data Bank is available at 1. Research Center for Structural Bioinformatics 2. Research Center for Structural Biology 3. Research Collaboratory for Structural Biology 4. Research Collaboratory for Structural Bioinformatics A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

109	1003639	Which of the following is not a molecular visualization software for protein structures? 1. PHYLIP 2. DeepView 3. RasMol 4. Chime A1 : 1 A2 : 2	4.0	1.00
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A3 : 3

A4 : 4

Objective Question

110	1003640	Consider the following statements: (A). Protein Data Bank (PDB) format is a standard for files containing atomic coordinates. (B). A protein structure in the Protein Data Bank (PDB) is generally represented by a four-character numeric identifier. (C). Each PDB formatted file includes SEQRES records which list the primary sequence of the polymeric molecules present in the entry. Choose the correct answer from the options given below: 1. A only 2. A and B only 3. A and C only 4. A, B and C A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

111	1003641	Arrange the basic steps of homology modeling in the correct order: (A). Model optimization (B). Backbone generation, loop modeling and side-chain modeling (C). Target-template alignment and alignment correction (D). Model validation (E). Identification of suitable template for a given target sequence Choose the correct answer (correct order of steps) from the options given below: 1. (C), (E), (D), (A), (B) 2. (E), (C), (D), (A), (B) 3. (E), (C), (B), (A), (D) 4. (C), (E), (B), (A), (D) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

112	1003642	Given below are two statements regarding RNA secondary structure prediction, one is labelled as Assertion (A) and other one labelled as Reason (R). Assertion (A): In ab initio approach of RNA secondary structure prediction, generally, when a base pairing is formed, the energy of the molecule is lowered. Reason (R): The attractive interactions lead to lower energy. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below . - Both (A) and (R) are correct and (R) is the correct explanation of (A). - Both (A) and (R) are correct but (R) is NOT the correct explanation of (A). (A) is correct but (R) is not correct. (A) is not correct but (R) is correct. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

1131003643

4.01.00

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

List-I	List-II
(A). CHARMM	(I). Automated homology modelling tool
(B). GLIDE	(II). Protein structure classification database
(C). FSSP	(III). Program for macromolecular dynamics and mechanics
(D). Swiss-Model	(IV). Docking

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

1. (A) - (III), (B) - (II), (C) - (IV), (D) - (I)

2. (A) - (IV), (B) - (III), (C) - (I), (D) - (II)

3. (A) - (IV), (B) - (III), (C) - (II), (D) - (I)

4. (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

114	1003644		4.0	1.00
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What will be the output of the following C++ code?

```
#include
using namespace std;
int main() {
    int a, b, c;
    a = 5;
    b = 10;
    c = (a > b) ? a : b;
    cout << "c: " << c;
    return 0;
}
```

1. c: 5
2. c: 10
3. c: 0.5
4. c: 2

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

115 1003645

4.0 1.00

Given below are two statements regarding the concepts used in object-oriented programming:

Statement (I): The process by which objects of one class acquire the properties of objects of another class is known as inheritance.

Statement (II): Inheritance supports the concept of hierarchical classification.

In light of the above statements, choose the *most appropriate* 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.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

116	1003646	Which of the following function in Perl is used to remove last character from the line? 1. erase 2. split 3. cut 4. chop A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

117	1003647	Consider the following statements regarding various functions used in standard Perl: (A). The pop() and shift() functions may be used to remove an item from an array. (B). pop() removes the last item while shift() removes the first item. (C). The unshift() function is used to append a list of items to the end of an array. Choose the correct answer from the options given below: 1. Only (A) and (B) are true. 2. Only (A) and (C) are true. 3. Only (B) and (C) are true. 4. Only (A), (B) and (C) are true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

118	1003648	Given below are two statements regarding support vector machine (SVM): Statement (I): SVM's classification function is based on the concept of decision planes that define decision boundaries between classes of samples. Statement (II): In the SVM algorithm, the loss function that helps to maximize the margin between the data points and the hyperplane is kernel function. In light of the above statements, choose the <i>most appropriate</i> 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. A1 : 1	4.0	1.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

119	1003649	Consider the following statements regarding cDNA microarrays for comparing gene expression in two different conditions, two samples are labelled with two different fluorescent dyes. The cDNA from sample A is labeled with Cy5 and cDNA from the other sample B is labeled with Cy3. Statement (I): In a typical raw image of a scanned microarray, the red spots represent Cy3-labeled cDNAs (sample B) and the green spots represent Cy5-labeled cDNAs (sample A). Statement (II): In a typical raw image of a scanned microarray, a red spot means that the genes corresponding to the probe at that position is overexpressed in sample B. In light of the above statements, choose the <i>most appropriate</i> answer from the options given below. - Both Statement (I) and Statement (II) are true. - Both Statement (I) and Statement (II) are false. - Statement (I) is true but Statement (II) is false. - Statement (I) is false but Statement (II) is true. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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Objective Question

120	1003650	If the base call accuracy is 99.99%, then the Phred quality score is 30 40 50 60 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
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