

PREVIEW QUESTION BANK

Module Name : SCPH31 Computational Biology and Bioinformatics Track - 2 TRTH - ENG
Exam Date : 26-Oct-2023 Batch : 09:30-12:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	997001	A population is divided into three strata so that $N_1 = 5000$, $N_2 = 2000$ and $N_3 = 3000$. Respective standard deviations are: $\sigma_1 = 15$, $\sigma_2 = 18$ and $\sigma_3 = 5$. How should a sample of size $n = 84$ be allocated to the three strata, if we want optimum allocation using disproportionate sampling design? $n_1 = 5, n_2 = 2, n_3 = 1$ $n_1 = 50, n_2 = 24, n_3 = 10$ $n_1 = 500, n_2 = 240, n_3 = 100$ $n_1 = 25, n_2 = 12, n_3 = 5$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
2	997002	Spearman's coefficient of rank correlation $\frac{\frac{\sum \hat{x}_i \cdot \hat{y}_i}{n} - \left(\frac{\sum \hat{x}_i}{n} \cdot \frac{\sum \hat{y}_i}{n} \right)}{\sqrt{\frac{\sum \hat{x}_i^2}{n} - \left(\frac{\sum \hat{x}_i}{n} \right)^2} \sqrt{\frac{\sum \hat{y}_i^2}{n} - \left(\frac{\sum \hat{y}_i}{n} \right)^2}}, \text{ where all notations have usual meanings.}$ $\frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{n \cdot \sigma_X \cdot \sigma_Y}, \text{ where all notations have usual meanings.}$ $1 - \left[\frac{6 \sum d_i^2}{n(n^2 - 1)} \right], \text{ where } d_i = \text{difference between ranks of } i\text{th pair of the two variables; } n = \text{number of pairs of observations.}$ $\frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2} \cdot \sqrt{\sum (Y_i - \bar{Y})^2}}, \text{ where all notations have usual meanings.}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
3	997003		4.0	0.00

A market research survey in which 64 consumers were contacted states that 64 per cent of all consumers of a certain product were motivated by the product's advertising. Find the confidence limits for the proportion of consumers motivated by advertising in the population, given a confidence level equal to 0.95.

given that z value for 95% confidence interval is 1.96.

1. lower confidence limit is 32.24%

upper confidence limit is 45.76%

2. lower confidence limit is 22.24%

upper confidence limit is 35.76%

3. lower confidence limit is 55.00%

upper confidence limit is 45.00%

4. lower confidence limit is 52.24%

upper confidence limit is 75.76%

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

4

997004

Match List I with List II

Suppose we want to test the hypothesis that the population mean μ is equal to the hypothesised mean $\mu_{H_0} = 100$.

Alternate Hypothesis		To be read as follows	
A.	$H_a : \mu \neq \mu_{H_0}$	I.	The null hypothesis is that the population mean is equal to the hypothesis mean 100
B.	$H_a : \mu > \mu_{H_0}$	II.	The alternative hypothesis is that the population mean is not equal to 100 i.e., it may be more or less than 100
C.	$H_a : \mu < \mu_{H_0}$	III.	The alternative hypothesis is that the population mean is greater than 100
D.	$H_a : \mu = \mu_{H_0}$	IV.	The alternative hypothesis is that the population mean is less than 100

Choose the correct answer from the options given below:

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

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

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

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

A1 : 1

A2 : 2

4.0

0.00

		A3 : 3		
		A4 : 4		
Objective Question				
5	997005	Which of the followings does not belong to probability sampling: I. Cluster Sampling II. Quota Sampling III. Purposive sampling IV. Systematic Sampling 1. I & IV only 2. II & III only. 3. I only 4. IV only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
6	997006	SPSS stands for 1. Statistical package for system sciences 2. Statistical package for social sciences 3. Statistical package for social system 4. Science package for social sciences A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
7	997007	Conversion of 0.625 into its equivalent binary fraction 1. 0.101 2. 0.0101 3. 0.00101 4. 1.101 A1 : 1	4.0	0.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
8	997008	A sample consists of three sub-samples with sizes 45,40 and 65 having their means 2.0, 2.5, 3.0 respectively. Mean of the combined sample is 1. 3.57 2. 2.57 3. 1.57 4. 4.57 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
9	997009	Which of the following is an example of primary source of information? 1. A database curated from literature 2. Direct outcome of an experiment 3. Results of a novel analysis 4. Highly cited research paper A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
10	997010	Plagiarism refers to 1. Publishing results by faking data 2. Allowing other to published our data 3. Publishing work from sources without citation or permission 4. Drawing conclusions without supporting data A1 : 1	4.0	0.00

		A2 : 2		
		A3 : 3		
		A4 : 4		
Objective Question				
11	997011	Which of the following is an example of data fudging? 1. Rounding off numerical values of data 2. Creating data manually without performing experiment 3. Using someone else's data without acknowledgement or permission 4. Wrong Data entry A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
12	997012	Clustering analysis in a microarray experiment refers to? 1. Cluster of cDNAs printed on the array 2. Genes that are likely to work in concert in the given tissue/cell 3. Genes clustered together in the genome 4. Clusters of probes used to monitor the gene expression A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
13	997013	Z Score Statistic is computed considering 1. Mean 2. Mean and Mode 3. Mean and standard deviation 4. Mean and Median A1 : 1 A2 : 2	4.0	0.00

		A3 : 3		
		A4 : 4		
Objective Question				
14	997014	In an autoclave, equipment and reagents are sterilized by subjecting them to? 1. Saturated steam under at least 15 psi pressure, 121°C temperature for 15-20 min 2. Saturated steam under at least 35 psi pressure, 121°C temperature for 1.5 h 3. Saturated steam under at least 15 psi pressure, 100°C temperature for 15-20 min 4. Saturated steam under at least 10 psi pressure, 100°C temperature for 1.5 h A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
15	997015	GUI refers to? 1. Graphical Unit Intensity of Pixels 2. Command like interfaces 3. Graphical user interface 4. Unix-like operating system A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
16	997016	Find the odd pair out considering their functional relationship: 1. Cancer and healthy cells 2. Gene and genome 3. Enzyme and catalysts 4. Glucose and Fructose A1 : 1 A2 : 2	4.0	0.00

		A3 : 3		
		A4 : 4		
Objective Question				
17	997017	In a U-shaped pipe, partially filled with a liquid, the right side is narrow and the left is broad. Under normal conditions of free movement of liquid and with enough liquid on the two sides, the levels will be as follows? 1. Right side will always be higher than the left side 2. Left side will always be higher than the right side 3. The levels on the right and left will be equal 4. It depends on the density of liquid A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
18	997018	Mean of two groups was calculated as M1 and M2 independently. If the two groups are merged, which of the following is true? 1. The new mean is the mean of M1 and M2 2. The new mean value will always be between or equal to M1 and M2 3. The new mean can be computed from M1 and M2 4. The new mean will be closer to the smaller of M1 and M2 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
19	997019	Type - I error is called as 1. P (rejecting the null hypothesis when it is true) 2. P (rejecting the null hypothesis when it is false) 3. P (rejecting the null hypothesis when it is equal) 4. Power of the study A1 : 1 A2 : 2	4.0	0.00

		A3 : 3		
		A4 : 4		
Objective Question				
20	997020	Which method used for checking the data normality in statistics 1. T - Test 2. ANOVA 3. Q-Q Plot 4. Chi-squared Test A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
21	997021	Which of the following is a negative number? 1. $\log_{10}(2)$ 2. $1e-10$ 3. $10!$ 4. $\log_2(10)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
22	997022	In experimental research "Controls" are used for 1. Publication 2. Data scaling 3. Data reference 4. Image construction A1 : 1 A2 : 2 A3 : 3	4.0	0.00

		A4 : 4		
Objective Question				
23	997023	One of the following is not a typical of a qualitative study 1. FGD 2. Case study 3. Depth interview 4. Correlation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
24	997024	What is the name of the distribution in which the mean and the variance are equal 1. Normal distribution 2. Exponential distribution 3. Poisson distribution 4. Binomial distribution A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
25	997025	Four people finish a task in 4 hours, how much time will 2 people take in finishing it, assuming equal efficiency and no overhead or mutual interaction? 1. 2 hours 2. 32 hours 3. 16 hours 4. 8 hours A1 : 1 A2 : 2 A3 : 3	4.0	0.00

		A4 : 4		
Objective Question				
26	997026	The meaning of false positive in data analysis is: 1. Concluding there is a difference between the groups being studied when, in fact, there is no difference. 2. Concluding there is no difference between the groups being studied when, in fact, there is a difference. 3. There is no error in the data structure. 4. There is no relationship among the groups of the data. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
27	997027	Which of the following is used by researchers to attempt to explain, predict, and explore the phenomenon of interest? 1. P-values 2. Correlation 3. Hypotheses 4. Interpolation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
28	997028	The most effective method of assigning participants to groups within a research study is through a procedure called as 1. Selective assignment 2. Group assignment 3. Intervention 4. Random assignment A1 : 1 A2 : 2 A3 : 3	4.0	0.00

		A4 : 4		
Objective Question				
29	997029	Which of the following is an ethical practice in research publication? 1. Stretching an image to improve readability 2. Hiding details of experiments so that others cannot copy it 3. Inviting friends to be co-authors even if they were not part of the study 4. Giving proper citations at appropriate places in the manuscript A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
30	997030	A predatory journal refers to 1. A journal that publishes papers with publication charges 2. A journal that doesn't have a rigorous review process 3. A journal that publishes articles about predatory wild animals 4. A journal that reports predatory events A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
31	997031	In Linux, which command can read the content of another file in vi editor? 1. erd 2. ex 3. r 4. read A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question

32

997032

4.0

0.00

Match List I with List II

LIST I		LIST II	
A.	Conference	I.	Academic meeting/ specialist delivers address/ Well-educated but not specialized
B.	Symposium	II.	Usually a formal meeting / Specialist delivers short address / Participants form audience and also make presentations
C.	Workshop	III.	People conferring on a topic / Usually discussion based / People from different backgrounds
D.	Colloquium	IV.	Smaller and more intense / Practice new skill / students or researchers keen on learning new skill

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33	997033	The acronym DOI points to - Data of Interest - Data of identifiable objects - Digital Object Identifier - Digital Object Inclusion A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

34	997034		4.0	0.00
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		For working on animal models, prior approval and clearance is generally provided by		
		1. Purchase committee 2. Disposal committee 3. Ethical approval committee 4. Academic Committee		
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

35	997035	The molecular weight of a protein is 30 kDa. The minimal length of mRNA encoding this polypeptide will be close to? 1. 900 2. 800 3. 1000 4. 300	4.0	0.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

36	997036	Considering an equal probability of occurrence of all the bases, how many possible DNA strings can be generated for a DNA probe having a length of 5 bases? 1. 20 2. 2000 3. 1024 4. 3125	4.0	0.00
		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

37	997037		4.0	0.00
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		If 5 ml of 20% ethanol is mixed with 25 ml of 80% ethanol, the resulting solution will approximately be: 1. 50% ethanol 2. 70% ethanol 3. 100% ethanol 4. 80% ethanol A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

38	997038	The best measure of dispersion is _____ 1. Mean 2. Mode 3. Mean deviation 4. Standard deviation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

39	997039	Length and breadth of a rectangle have been measured with a permissible error of 1 cm each. What is the permissible error in the estimate for its perimeter? 1. 1 cm 2. 2 cm 3. 3 cm 4. 4 cm A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

40	997040		4.0	0.00
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		Which of the following is the computing layer with which a programmer interacts? 1. Application programing interface (API) 2. Operating System 3. Assembly language 4. Process controller A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
41	997041	Open source for a computer program means? 1. Software binaries available freely for sharing 2. Software and code in the public domain 3. Software available for purchase in the open market 4. Program available with bugs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
42	997042	Observations of a parameter Y have fitted well with the observations of another parameter X on a given data set on a scatterplot. We can conclude that: 1. X causes Y 2. Y causes X 3. Both X and Y cause each other 4. Both X and Y shows the relationship to each other A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
43	997043		4.0	0.00

		Which of the following factors must be taken into account in quantitative research? A. Measurement B. Causality C. Replication D. Exclusion of Statistical analysis E. Less importance to standardisation Choose the most appropriate answer from the options given below: 1. (A), (B) and (C) only 2. (B), (C) and (D) only 3. (C), (D) and (E) only 4. (A), (C) and (D) only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

44	997044	For empirical studies, the poster presentation can have: A. Abstract B. Method C. Data D. Results E. Conclusion Choose the most appropriate answer from the options given below: 1. (B), (D) and (E) only 2. (C), (D) and (E) only 3. (A), (D) and (E) only 4. (A), (B), (C), (D) and (E) only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

45	997045	According to post - positivists, it is impossible to achieve 1. Objectivity 2. Abstraction 3. Predictability 4. Qualitative assertions	4.0	0.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

46

997046

Match List I with List II

4.0

0.00

LIST I Type of Validity		LIST II Reflection	
A.	Face Validity	I.	Indicates adequacy of instrument
B.	Concurrent Validity	II.	Indicates the extent to which the measurement is used
C.	Construct	III.	Compares a new test to an already established test
D.	Predictive	IV.	The extent to which a score on a scale forecasts scores on same criterion measure

Choose the correct answer from the options given below:

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

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

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

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

47

997047

Creating a purpose statements, research questions and hypotheses that are narrow and measurable would mark the characteristic features of which research type?

4.0

0.00

1. Narrative research

2. Ethnographic research

3. Grounded theory research

4. Experimental research

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

48	997048	In which of the following research methods, process of hypothesis testing optimally safeguards the role of extraneous variables? 1. Expost Facto method 2. Experimental method 3. Historical method 4. Descriptive survey method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

49	997049	A testing type called _____ is a systematic, thorough, independent evaluation of a product or service. 1. alpha testing 2. beta testing 3. primary testing 4. case testing A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

50	997050		4.0	0.00
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Match List I with List II

LIST I		LIST II	
A.	efficiency of a measurement instrument	I.	degree to which the instrument actually measures what it is supposed to measure.
B.	validity of a measurement instrument	II.	ratio between the benefits and the costs of using the instrument.
C.	precision of a measurement instrument	III.	degree to which use of the instrument does not require special knowledge or the use of judgment.
D.	objectivity of a measurement instrument	IV.	capacity of that instrument to resolve small differences in the parameter or quality being measured.

Choose the correct answer from the options given below:

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

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

51	997051	Which of the following is least likely to be a DNA-binding protein?	4.0	0.00
1. Transcription factor 2. Histones 3. Transmembrane proteins 4. Pathogen activated nucleic acid sensing proteins				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

52	997052		4.0	0.00
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		Free energy change upon mutation in a protein is an estimate of (choose the best answer) 1. Conservation of that residue 2. Criticality of the residue for its stability 3. Functional relevance of that residue 4. Contribution of that residue to protein's mobility A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

53	997053	Which of the following does NOT represent a secondary structure in proteins? 1. Alpha helix 2. Beta sheets 3. 3-10 helix 4. Disorder A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

54	997054	Which of the following methods of gene expression profiling is based on prior knowledge of sequence information? 1. RNA-seq 2. Microarray 3. SAGE 4. MPSS A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

55	997055	BLASTX is a sequence alignment tool used for 1. Sequence similarity search of both DNA strands against the nucleotide database 2. Sequence similarity search of both DNA strands against the protein database 3. Sequence similarity search of single DNA strand against the nucleotide database 4. Sequence similarity search of single DNA strand against the protein database A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

56	997056	Which of the following sequencing technology represents the single molecule real time sequencing? 1. Sanger 2. Illumina 3. PacBio 4. Sequencing by synthesis A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

57	997057	Which of the following e-values in a BLAST search represents the most significant valid sequence similarity? 1. 1 2. 10 3. -10 4. 1e-100 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

58	997058		4.0	0.00
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		To define the significance of differential gene expression generally requires the consideration of which of the following parameter/s? 1. Fold change 2. P-value 3. Fold change and P-value 4. E-value A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

59	997059	Which of the following does NOT represent an epigenetic variation? 1. Glycosylation 2. Histone methylation 3. Methylated cytosine 4. Histone acetylation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

60	997060	Which of the following is a phylogenetic tree evaluation method? 1. Maximum parsimony 2. UPGMA 3. Neighbor Joining 4. Bootstrapping A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

61	997061		4.0	0.00
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		Which of the following does NOT represent a scoring matrix for sequence alignments? 1. PAM250 2. PAM40 3. BLOSUM62 4. BLOSUM250 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

62	997062	What does FPKM refer to in an RNA-sequencing experiment? 1. Fragments per kilobase per million 2. Fragments per K-mers 3. Fragments per kilobase per machine 4. Fragments per kilobyte and megabyte A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

63	997063	Most preferred file format to store the genome annotation is? 1. FASTA 2. GFF 3. FAST5 4. FASTQ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

64	997064		4.0	0.00
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		One of the following refers more closely to pathway enrichment in functional annotation 1. Addition of new genes to a given pathway 2. Many pathways are being activated 3. More genes than expected in a gene list coming from that pathway 4. Higher expression of all the genes from that pathway in the given experiment A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

65	997065	Which of the following methods is commonly used for mapping of the short reads? 1. Cufflinks 2. MACS 3. Bowtie 4. BLAST A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

66	997066	The estimated genome size of an organism after the assembly was found to be 5 Mb. This assembly has been generated from 2.5 million reads each of 100 nt in length? What is the sequencing depth? 1. 50x 2. 200x 3. 150x 4. 125x A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

67	997067	Which of the following statements is NOT true about paralogs? 1. They diverge after a speciation event 2. They might have different sequence composition 3. They might have different function 4. They arise due to duplication A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

68	997068	The correct sequence of steps in the genome assembly process is ---- 1. Reads, Scaffolds, Contigs, Pseudomolecules 2. Reads, Contigs, Scaffolds, Pseudomolecules 3. Pseudomolecules, Reads, Scaffolds, Contigs 4. Contigs, Reads, Scaffolds, Pseudomolecules A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

69	997069	Which of the following is the most frequent type of genetic variation in human? 1. Copy number variations 2. Trisomies 3. Monosomies 4. Single Nucleotide Polymorphisms A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

70	997070		4.0	0.00
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		Which of the following pairs of biomolecules are likely to interact most strongly forming a complex? 1. A transmembrane helical protein and water 2. An alanine rich protein and sugar 3. An arginine rich protein and genomic DNA 4. A pair of arginine rich proteins A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
71	997071	Which of the following statement is most accurate about proteins 1. Sequence is more conserved than structure 2. Each mutation is likely to cause some functional change 3. Sequence similarity higher than 50% will produce the same fold 4. Membrane proteins evolve faster than soluble proteins A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
72	997072	One of the following technique is currently capable to give insights into the three-dimensional topology of a genome 1. Chromatin Conformation Capture 2. ChIP-Seq 3. X-ray crystallography 4. Nuclear Magnetic Resonance (NMR) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
73	997073		4.0	0.00

A disulfide bond in protein structure is typically formed between

1. Two sequence-adjacent Cys residues
2. Two sequence non-proximal Trp residues
3. An Arg and an Ala residue
4. Two sequence non-proximal Cys residues

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

74	997074	Which of the following represents a post-translation modification in proteins	4.0	0.00
1. Hydration 2. Inter-residue covalent bonding 3. Phosphorylation 4. Oligomerization				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

75	997075	Which of the following DNA structure form left-handed double helix?	4.0	0.00
1. A-DNA 2. B-DNA 3. C-DNA 4. Z-DNA				
A1 : 1				
A2 : 2				
A3 : 3				
A4 : 4				

Objective Question

76	997076		4.0	0.00
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		One of the following organelle sets generally have their own genome 1. Mitochondria, Nucleus, Golgi Apparatus 2. Nucleus, Mitochondria, Chloroplast 3. Mitochondria, Nucleus, Centriole 4. Chloroplast, Nucleus, Centriole A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
77	997077	DNA fingerprinting is based on which of the following 1. Cloned DNA 2. Human karyotype 3. Occurrence of VNTRs 4. Recombinant DNA A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
78	997078	Root nodules appear pink in color due to which of the following 1. Leghaemoglobin 2. Haemoglobin 3. Phytocyanin 4. Myoglobin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
79	997079		4.0	0.00

		You have examined 10000 cells in a culture and found that only 2 cells were in mitosis. The mitotic index is 1. 20000 2. 0.0002 3. 0.0001 4. 5000 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

80	997080	Which of the following molecular markers is most amenable for automation in most of genotyping studies 1. AFLPs 2. RFLPs 3. ISSRs 4. SNPs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

81	997081	Which of the following statements about short interspersed nuclear elements (SINEs) is true? 1. SINEs represent a class of retrotransposons 2. SINEs can transpose independently 3. SINEs can mobilize the neighboring LINE repeats 4. SINEs are normally transcribed by RNA polymerase I A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

82	997082		4.0	0.00
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		Which of the following cloning vectors will be most suitable to clone a 200 kb gene? 1. Plasmid 2. Bacterial Artificial Chromosome 3. Cosmid 4. Bacteriophage based vectors A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

83	997083	One of the following statement about signal recognition particles (SRP) is correct 1. An SRP contains RNA and protein 2. An SRP is an integral membrane protein 3. An SRP docks with a receptor on the surface of the ER membrane 4. An SRP binds to localization signal at the N-terminus of the emerging polypeptide chain. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

84	997084	Which one of the following techniques can be utilized to study protein-peptide and protein-DNA interactions? 1. DNA footprinting 2. ChIP-on-chip assay 3. Phage Display 4. 2-D Gel electrophoresis A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question				
85	997085	The following is associated with RNA-induced gene silencing in plants 1. DNA acetylation 2. DNA degradation 3. DNA restriction 4. DNA methylation A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
86	997086	The allergenicity of a protein refers to its capacity to activate: 1. B cells 2. Dendritic cells 3. Mast cells 4. M cells A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
87	997087	The enhanced resistance to a subsequent attack of a local pathogen infection developed in plants is called as — 1. Hypersensitive response 2. Systemic acquired resistance 3. Heat shock response 4. DAMP-triggered immunity A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
88	997088	One of the following is an amino acid based profile representation: 1. TrEMBL 2. Interpro 3. Gene ontology 4. Pfam A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
89	997089	In a <i>de novo</i> RNA-seq analysis project, different major steps followed are listed below A. Quality control of raw sequencing data B. Mapping of filtered reads to the transcriptome assembly C. <i>De novo</i> assembly of the filtered reads D. Quantification of gene expression The correct order of the steps are _____ 1. A, B, C, D 2. A, C, B, D 3. A, C, D, B 4. A, B, D, C A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
90	997090	To group the differentially expressed genes into broader functional classes, gene set enrichment analysis (GSEA), uses which of the following resource? 1. Pfam database 2. PRODOM database 3. Gene ontology 4. NCBI NR database A1 : 1 A2 : 2	4.0	0.00

		A3 : 3		
		A4 : 4		
Objective Question				
91	997091	The histone code refer to ____ 1. Combination of different histone proteins to form a nucleosome 2. Modifications of histones 3. Different histone proteins present in different eukaryotic organisms 4. Different order of histone proteins in a given nucleosome A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
92	997092	In a transgenic plant, the phenomenon of co-suppression is generally due to 1. Integration of transgene within the endogenous gene 2. Integration of transgene at a locus very close to the endogenous gene 3. Similarity between the transgene and endogenous gene sequences 4. Lack of similarity between the transgene and endogenous gene sequences A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
93	997093	One of the following is matched incorrectly for the best output 1. Genome assembly <--> de Bruijn 2. RNA-seq read mapping to the Genome <--> Bowtie 3. WGS read mapping to the genome <--> BWA 4. Transcriptome assembly <--> de Bruijn A1 : 1 A2 : 2	4.0	0.00

		A3 : 3		
		A4 : 4		
Objective Question				
94	997094	Which region of the mRNA contains Shine-Dalgarno sequence? 1. 5'-UTR 2. CDS 3. 3'-UTR 4. Promoter A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
95	997095	The KDEL sequence of the ER luminal proteins is responsible for _____ 1. Quality control in the ER 2. Translocation of the proteins into the ER lumen 3. Insertion of proteins into the membrane pf the ER 4. Retrieval of ER luminal proteins from the Golgi A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
96	997096	One of the following represents an incorrect combination of the terms 1. PacBio : DNA sequencing 2. SSRs : Co-dominant markers 3. Pyrosequencing : Primary protein structure 4. Homologous recombination : Chloroplast transformation A1 : 1 A2 : 2 A3 : 3	4.0	0.00

		A4 : 4		
Objective Question				
97	997097	_____ region of an mRNA is generally associated with its destability 1. 5'-UTR 2. 3'-UTR 3. Exonic regions 4. Intronic regions A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
98	997098	To achieve higher differentiation of shoots in a plant tissue culture experiment,one of the following growth hormone ratios are generally recommended 1. High auxin to cytokinin 2. High gibberellin to cytokinin 3. High cytokinin to auxin 4. High gibberellin to auxin A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
99	997099	The most common processes that can lead to the production of multiple functional proteins from the same DNA sequence are 1. RNA editing and alternative splicing 2. Differential protein folding and protein splicing 3. Differential capping and polyadenylation of mRNA 4. Differential usage of enhancers and suppressors A1 : 1 A2 : 2 A3 : 3	4.0	0.00

		A4 : 4		
Objective Question				
100	997100	One of the following can be used to describe the relationship between a myoglobin gene from human and that from a mouse 1. Paralogs and Homologs 2. Homologs and Analogs 3. Orthologs and Paralogs 4. Homologs and Orthologs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00