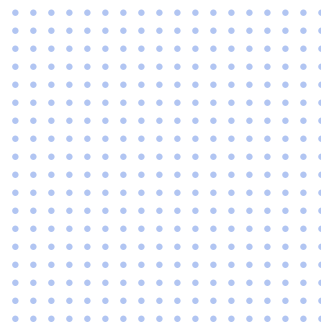




FOR KUET EXAM PREPARATION

KUET 2024

Question Paper · M.Sc. Bioresources

EXAM

KUET

YEAR

2024

TYPE

Question Paper

SUBJECT

M.Sc. Bioresources

Sr. No. 037

ENTRANCE TEST-2024

SCHOOL OF BIOLOGICAL SCIENCES

BIORESOURCES

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series

A

Roll No. :

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Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

SP-4493-A

1

[Turn over

1. In which year the International Union for the Conservation of Nature and Natural Resources (IUCN) was established ?
 (A) 1944
 (B) 1948
 (C) 1952
 (D) 1956
2. According to biological species concept, species are groups of potentially interbreeding natural populations that are:
 (A) Reproductively isolated
 (B) Geographically isolated
 (C) Both (A) and (B)
 (D) Neither (A) nor (B)
3. Who among the following proposed 'Universal' model for energy flow?
 (A) Evans
 (B) Linnaeus
 (C) Odum
 (D) Gilbert
4. A broadscale distribution of world vegetation and associated animals with a distinct ecological community of plants and animals living together in a particular climate is termed as :
 (A) Biome
 (B) Taiga biome
 (C) Tundra biome
 (D) Desert biome
5. In which year, Vavilov first published his concept of centres of origin of cultivated plants ?
 (A) 1916
 (B) 1922
 (C) 1926
 (D) 1930
6. What is name of a commercial drug, that has a major ingredient of *Arnebiabenthamii*, with antifungal, antibacterial, anti-inflammatory and wound-healing properties ?
 (A) Atropine
 (B) Gaozaban
 (C) Morphine
 (D) Digoxin
7. The scientific name of common dandelion is :
 (A) *Malva sylvestris*
 (B) *Cichorium intybus*
 (C) *Taraxacum officinale*
 (D) *Atropa acuminata*
8. Jute is a bast fibre that is harvested from the plant :
 (A) *Corchorus capsularis*
 (B) *Boehmeria nivea*
 (C) *Cannabis sativa*
 (D) *Linum usitatissimum*
9. The scientific name of rainbow trout is:
 (A) *Salmo platycephalus*
 (B) *Salvelinus fontinalis*
 (C) *Salmo trutta*
 (D) *Oncorhynchus mykiss*

Sr. No. 082

10. Which of the following is a fungal disease of honey bees ?
- Sac brood disease
 - Chalkbrood disease
 - Nosema disease
 - American foul brood
11. Which of the following is not a viral disease of silkworms ?
- Grasserie
 - Cytoplasmic polyhedrosis
 - Pebrine
 - Gattine
12. To explain the basis of heterosis, who among the following proposed overdominance hypothesis ?
- Shull and East
 - Jones
 - Fisher
 - Mather
13. SCP stands for :
- Single cell protein
 - Singel cell polysaccharide
 - Single cell polystyrene
 - Somatic cell proliferation
14. Which of the following is not a cheese producing microbe ?
- Streptococcus lactis*
 - Penicillum candidum*
 - Brevibacterium linens*
 - Beauveria bassiana*
15. In which year, Alexander Fleming was awarded Nobel Prize for his study on antibiotics ?
- 1930
 - 1945
 - 1950
 - 1962
16. *Saccharomyces carlsbergensis* is used to prepare :
- Cheese
 - Beer
 - Antibiotics
 - Bread
17. Enthalpy, the heat content of the reacting system, is represented by :
- $H = U - PW$
 - $H = U + PW$
 - $H = U - PV$
 - $H = U + PV$
18. According to first law of thermodynamics :
- Energy can be created but not destroyed
 - Energy can be created and destroyed
 - Energy can neither be created nor destroyed
 - None of the above
19. Which of the following is true for pH ?
- $pH = -\log[H^+]$
 - $pH = \log \frac{1}{[H^+]}$
 - $pH = \log [H^+]$
 - Both (A) and (B)

SP-4493-A

3

[Turn over

20. Buffers are mixtures of :
- Weak acids and their conjugate bases
 - Strong acids and their conjugate bases
 - Weak alkaloids and their conjugate bases
 - Strong alkaloids and their conjugate bases
21. The statement "*omnis cellula e cellula*" was proposed by :
- Robert Hooke
 - Anton van Leeuwenhoek
 - Rudolf Virchow
 - Schleiden and Schwann
22. In which year, Jonathan Singer and Garth Nicolson proposed fluid-mosaic model of plasma membrane ?
- 1970
 - 1972
 - 1974
 - 1976
23. Which of the following was earlier known as GERL (Golgi complex-ER-lysosome) ?
- trans*-Golgi network
 - cis*-Golgi network
 - Endoplasmic reticulum
 - Lysosomes
24. The period between the end of mitosis phase and the start of DNA replication is called as :
- G1 phase
 - G2 phase
 - S phase
 - None of the above
25. The *zona pellucida* of most mammalian eggs is composed mainly of :
- ZP1 glycoproteins
 - ZP2 glycoproteins
 - ZP3 glycoproteins
 - All of the above
26. Which of the following is most appropriate for extra-embryonic membranes ?
- Amnion, chorion
 - Yolk sac, allantois
 - Amnion, chorion, yolk sac
 - Amnion, chorion, yolk sac, allantois
27. Pollination in which the pollen from the anthers of one flower are transferred to the stigma of another flower borne on the same plant is termed as :
- Cleistogamy
 - Homogamy
 - Geitonogamy
 - Xenogamy
28. The development of reproductive propagules without meiosis and syngamy is called as :
- Porogamy
 - Mesogamy
 - Apomixis
 - Siphonogamy
29. In which plant, Frits Went discovered Auxin hormone ?
- Avena sativa*
 - Triticum aestivum*
 - Brassica oleracea* var. *botrytis*
 - Solanum tuberosum*

30. The downward curvature of leaves that occurs when the upper (adaxial) side grows faster than the lower (abaxial) side is termed as :
- Thermonasty
 - Epinasty
 - Nyctinasty
 - Thigmonasty
31. Which of the following is not true for innate immune response ?
- Antigen specific
 - Rapid response
 - Limited diversity
 - Found both in vertebrates and invertebrates
32. The only class of immunoglobulins that passes through the placenta and enabling the mother to transfer her immunity to the foetus is :
- IgG
 - IgA
 - IgM
 - IgE
33. In photosynthesis, light independent process is also called as :
- Carbon fixation
 - Calvin Benson cycle
 - Both (A) and (B)
 - Neither (A) nor (B)
34. Hatch-Slack pathway is also known as :
- C_3 cycle
 - C_4 cycle
 - CAM pathway
 - None of the above
35. Who discovered urea cycle ?
- Krebs and Henseleit
 - Friedrich Wohler
 - Antoine Lavoisier
 - James Sumner
36. Glycolytic pathway, also known as Embden-Meyerhof pathway, is an example of :
- Anaerobic fermentation
 - Aerobic fermentation
 - Phosphorylation
 - None of the above
37. Choose the correct empirical formula of monosaccharides :
- $(CHO)_n$
 - $(CH_2O)_n$
 - $(CH_3O)_n$
 - $(CH_4O)_n$
38. GAG stands for :
- Glycoacetoglycans
 - Glycoacylglycans
 - Glycoamineglycans
 - Glycosaminoglycans
39. Choose the correct statement for saturated fatty acids :
- Linear chains of CH_2 groups linked by carbon-carbon double bonds
 - Linear chains of CH groups linked by carbon-carbon single bonds
 - Linear chains of CH_4 groups linked by carbon-carbon single bonds
 - Linear chains of CH_2 groups linked by carbon-carbon single bonds

40. Who introduced the term "Sphingolipids" ?
 (A) Herbert Carter
 (B) Michael Garbriel
 (C) Dietrich Stephan
 (D) Adam Gilbert
41. Which one among the following is the first amino acid that was discovered ?
 (A) Glycine
 (B) Alanine
 (C) Asparagine
 (D) Lysine
42. In which year, Linus Pauling and Robert Corey proposed two structures namely α helix and β pleated sheets of proteins?
 (A) 1940
 (B) 1951
 (C) 1963
 (D) 1981
43. Who coined the term "enzyme" ?
 (A) James Sumner
 (B) Friedrich Kuhne
 (C) Louis Pasteur
 (D) Antoine Reaumur
44. The protein part of coenzyme is called as :
 (A) Holoenzyme
 (B) Apoenzyme
 (C) Cofactors
 (D) None of the above
45. In an incomplete dominance experiment, a four O'clock plant (*Mirabilis jalapa*) with red flowers were crossed with the white flowers, pink flowered F1 plants were obtained. If the pink flowered F1 plants are self-crossed, what would be F2 plants phenotypic ratio ?
 (A) 3 : 1
 (B) 9 : 3 : 1
 (C) 1 : 2 : 1
 (D) 1 : 4 : 1
46. How many qualitative traits Mendel studied for his experiment on *Pisum sativum* ?
 (A) 4
 (B) 7
 (C) 8
 (D) 9
47. Which of the following is not true for Z-DNA ?
 (A) Z-DNA is a left-handed double helix structure
 (B) Z-DNA is thinner than B-DNA
 (C) In Z-DNA, the repeating unit is 2 base pairs
 (D) In Z-DNA, the repeating unit is a 1 base pair
48. While describing the aneuploidy in diploid organisms, the correct formula for "double trisomic" condition is:
 (A) $2n + 1 + 1$
 (B) $2n - 1 - 1$
 (C) $2n + 1$
 (D) $2n + 2$
49. The model of replication, where a parental duplex DNA gives rise to two identical daughter duplexes DNA with each containing one original parental strand and one new strand, is called as :
 (A) Conservative replication
 (B) Semiconservative replication
 (C) Dispersive replication
 (D) None of the above

50. How many codons in the genetic code specify the 20 amino acids, most commonly found in proteins ?
 (A) 61 sense codons, 3 stop codons
 (B) 62 sense codons, 3 stop codons
 (C) 63 sense codons, 3 stop codons
 (D) 64 sense codons, 3 stop codons
51. Who among the following formulated operon model ?
 (A) William Harvey
 (B) Jacob and Monod
 (C) Weiss and Hurwitz
 (D) Robin Holliday
52. DNA dependent RNA synthesis is catalyzed by the enzyme known as :
 (A) DNA dependent RNA Polymerase
 (B) RNA dependent RNA Polymerase
 (C) Gyrase
 (D) Topoisomerase
53. The oxidation of ammonium ions to nitrite and subsequent oxidation of nitrite to nitrate is called as :
 (A) Ammonification
 (B) Nitrification
 (C) Denitrification
 (D) Anammox
54. Which of the following is true for acid rain ?
 (A) pH of the rain water drops below 5.6
 (B) pH of the acid rain ranges between 4.2 and 4.4
 (C) Airborne sulfuric acid and nitric acid make water more acidic
 (D) All of the above
55. An illness that begins when large amounts of nitrates in water are ingested by an infant and converted to nitrite by the digestive system is known as :
 (A) Minamata disease
 (B) Itai-itai disease
 (C) Blue baby syndrome
 (D) Down's syndrome
56. Levels of ozone in the stratosphere are measured in :
 (A) Dobson Units
 (B) Cubic millimeters
 (C) Cubic yards
 (D) Milliliter per litre
57. Who is referred to as father of chromatography ?
 (A) Tswet
 (B) Martin
 (C) Synge
 (D) Karlson
58. SDS-PAGE stands for :
 (A) Sodium decylsulfate polyacrylamide gel electrophoresis
 (B) Sodium desulfate polyacrylamine gel electrophoresis
 (C) Sodium decisulfate polyacrylamide gel electrophoresis
 (D) Sodium dodecylsulfate polyacrylamide gel electrophoresis
59. "Recombinants are hybrid DNA molecules consisting of autonomously replicating DNA segment and inserted elements". Such molecules are also called as :
 (A) Plasmids
 (B) Cosmids
 (C) Chimera
 (D) Phagemids
60. What are the pre-requisites for polymerase chain reaction ?
 (A) Primers only
 (B) Primers and *Taq* polymerase
 (C) Primers, *Taq* polymerase and DNA
 (D) Primers and DNA