



FOR KUET EXAM PREPARATION

# KUET 2023

## Question Paper · M.Sc. Bioresources

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| EXAM | YEAR | TYPE           | SUBJECT            |
|------|------|----------------|--------------------|
| KUET | 2023 | Question Paper | M.Sc. Bioresources |

Sr. No. ....

**ENTRANCE TEST-2023****SCHOOL OF BIOLOGICAL SCIENCES****BIORESOURCES**

Question Booklet Series

**A**

Total Questions : 60

Time Allowed : 70 Minutes

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.

SM-29580-A

**1****[Turn over**

1. According to the *Biosystematic species concept*, a Coenospecies is considered equivalent to a
  - (A) Subspecies
  - (B) Subgenus
  - (C) Genus
  - (D) Family
2. The pyramid of energy which is a graphic representation of the amount of energy trapped per unit time and area in different trophic levels in a food chain, is always
  - (A) Inverted
  - (B) Horizontal
  - (C) Linear
  - (D) Upright
3. The species which have much greater influence on community characteristics relative to their low abundance or biomass are known as
  - (A) Keystone species
  - (B) Critical species
  - (C) Landstone species
  - (D) Trans species
4. Whittaker described the diversity within a particular area or ecosystem usually expressed as species richness as
  - (A) Gamma diversity
  - (B) Beta diversity
  - (C) Alpha diversity
  - (D) None of the above
5. The separation of cotton lint from the seed is called
  - (A) Baling
  - (B) Ginning
  - (C) Seeding
  - (D) Galing
6. Dandelion is the common name of this plant with hepatoprotective properties :
  - (A) *Catharanthus roseus*
  - (B) *Atropa acuninata*
  - (C) *Cichorium intybus*
  - (D) *Taraxacum officinale*
7. Historically this medicinal plant was grown by ancient Egyptians as a coffee substitute and vegetable crop :
  - (A) *Cichorium intybus*
  - (B) *Malva sylvestris*
  - (C) *Arnebia benthamii*
  - (D) *Atropa acuminata*
8. Hydrothermal treatment followed by drying before milling to improve the quality of rice is called
  - (A) Lessboiling
  - (B) Parboiling
  - (C) Chemiboiling
  - (D) None of the above
9. Cleavage Polyembryony is seen in
  - (A) *Petunia*
  - (B) *Citrus*
  - (C) *Pinus*
  - (D) *Mango*
10. In honey bees the Royal jelly is secreted by
  - (A) Comb gland
  - (B) Crop gland
  - (C) Pineal gland
  - (D) Hypopharyngeal gland

11. The proteinaceous silk gum coating the fibres and keeping them together in silkworms is called
  - (A) Silkinin
  - (B) Sericin
  - (C) Bombyrin
  - (D) Casuarin
12. In carp, the larvae emerging from the fertilized egg is called
  - (A) Hatchling
  - (B) Fry
  - (C) Fingerling
  - (D) Prawns
13. The most common prion disease in humans is
  - (A) Kuru
  - (B) Fatal familial Insomnia
  - (C) Creutzfeldt Jakob Disease
  - (D) Gerstmann – Straussler – Sheinker Syndrome
14. Which among the following is a poisonous mushroom ?
  - (A) *Coprinus comatus*
  - (B) *Amanita muscaria*
  - (C) *Pleurotus sajor caju*
  - (D) *volvariella volvacea*
15. Abnormal pathogenic agents that are transmissible and are able to induce abnormal folding of specific normal cellular proteins are called
  - (A) Virions
  - (B) Proteons
  - (C) Viriods
  - (D) Prions
16. In TMV the Capsid consists of
  - (A) 426 capsomeres
  - (B) 213 capsomeres
  - (C) 2130 capsomeres
  - (D) 4260 capsomeres
17. A frozen lake in winter with fish swimming below the surface is possible because of which property of water ?
  - (A) Cohesion
  - (B) Polarity
  - (C) Low molecular weight
  - (D) Adhesion
18. Exergonic reaction is
  - (A) Anabolic reaction
  - (B) Hydrolytic reaction
  - (C) Catabolic reaction
  - (D) All of the above
19. If the free energy of a chemical reaction is negative, it is a
  - (A) Non spontaneous reaction
  - (B) Reaction at Equilibrium
  - (C) Spontaneous chemical reaction
  - (D) None of the above
20. Which of the following bonds is the weakest ?
  - (A) Van der waals forces
  - (B) Hydrogen bond
  - (C) Covalent bond
  - (D) Ionic bond

21. Which of the statement is true regarding the fluid mosaic model proposed by Singer and Nicolson ?  
(A) lipid and integral proteins are in a mosaic arrangement.  
(B) The biological membranes are quasi-fluid structures.  
(C) The concept of fluidity implies that the main components of the membrane are held in place by non-covalent interactions  
(D) All the above
22. This stage of meiotic prophase I is recognized by the dissolution of the synaptonemal complex :  
(A) Diakinesis  
(B) Diplotene  
(C) Pachytene  
(D) Zygotene
23. The Thylakoids of different grana are connected to one another by flattened membranous structures called  
(A) Thyllakoid  
(B) Lamellar thyllakoid  
(C) Stroma thyllakoid  
(D) Stroma lamella
24. The inner mitochondrial membrane is rich in a phospholipid called  
(A) Phosphatidylinositol  
(B) Cardiolipin  
(C) Phosphotidylserine  
(D) Phosphotidylcholine
25. In males Cryptorchidism means  
(A) Failure of one or both testes to descend into scrotum  
(B) Presence of fluid in the scrotum  
(C) Presence of intestinal contents in the scrotum  
(D) Presence of more than two testes in the scrotum
26. Which of the following hormone is not produced by placenta ?  
(A) Progesterone  
(B) Estrogen  
(C) Human Chorionic Gonadotrophin  
(D) Tri iodothyronine
27. Albuminous seeds are produced in  
(A) Bean  
(B) Rice  
(C) Orchids  
(D) Wheat
28. Pollination by snail and slug is called  
(A) Ornithophily  
(B) Cheiropterophily  
(C) Malacophily  
(D) Anemophily
29. 'Milk let down' hormone is the name given to  
(A) Progesterone  
(B) Estrogen  
(C) Oxytocin  
(D) Testosterone
30. Cushings syndrome is caused by  
(A) Hyposecretion of Cortisol  
(B) Hyposecretion of Calcitonin  
(C) Hypersecretion of Calcitonin  
(D) Hypersecretion of Cortisol

31. The hypersecretion of growth hormone in adults causes  
(A) Gigantism  
(B) Acromegaly  
(C) Cretinism  
(D) Dwarfism
32. The immunoglobulins that mediate allergic reactions is  
(A) Ig A  
(B) Ig G  
(C) Ig E  
(D) Ig M
33. The final electron acceptor in lactic acid fermentation is  
(A) Pyruvate  
(B) NADH  
(C) O<sub>2</sub>  
(D) Lactic acid
34. The Chemiosmotic hypothesis was proposed by  
(A) Alfred Russell  
(B) Gregor Mendel  
(C) Charles De Moore  
(D) Peter Dennis Mitchell
35. Kranz Anatomy is seen in  
(A) C<sub>3</sub> plants  
(B) C<sub>4</sub> plants  
(C) CAM plants  
(D) C<sub>3</sub> and C<sub>4</sub> Plants
36. Source of CO<sub>2</sub> during daytime in CAM plants is  
(A) Oxalo acetic acid  
(B) 3-PGA  
(C) Malic acid  
(D) Pyruvate
37. Complete oxidation of One molecule of Palmitic acid (16 C) through  $\beta$  oxidation spiral and TCA cycle results in net gain of  
(A) 300 ATP molecules  
(B) 129 ATP molecules  
(C) 100 ATP molecules  
(D) 50 ATP molecules
38. Linoleic acid is an example of  
(A) Unsaturated fatty acid  
(B) Saturated fatty acid  
(C) Neutral fatty acid  
(D) Saturated fats
39. Ergosterol is also a part of the  
(A) Viral cell membrane  
(B) Bacterial cell membrane  
(C) Fungal cell membrane  
(D) Protozoal cell membrane
40. A class of lipids that serves as a major structural component of the cell membrane is  
(A) Waxes  
(B) Steroids  
(C) Triglycerides  
(D) Phospholipid
41. Which among the following is a Globular protein having a compact shape ?  
(A) Myoglobin  
(B) Keratin  
(C) Collagen  
(D) Elastin

42. Which among the following is not a conjugated protein ?
- Lipoprotein
  - Complete protein
  - Nucleoprotein
  - Glycoprotein
43. Captopril, the first useful antihypertensive drug that acts by binding to Angiotensin Converting Enzyme is a
- Irreversible inhibitor
  - Noncompetitive enzyme inhibitor
  - Competitive enzyme inhibitor
  - Blocking inhibitor
44. The non protein component of the holoenzyme is called
- Apoenzyme
  - Co-factor
  - Conjugated Enzyme
  - Supported enzymes
45. Complementary genes in *Lathyrus odoratus* were first studied in 1906 by
- Bateson and Punnett
  - Mendel and Morgan
  - Bateson and Mendel
  - E. Baur
46. Partial deletion of the short arm of chromosome 5 causes
- Edward's Syndrome
  - Down's Syndrome
  - Klinefelter's Syndrome
  - Cri-du-chat Syndrome
47. Fruit colour in Summer Squash shows dominant epistasis with a phenotypic ratio of  $F_2$  generation as
- 9:3:4
  - 9:3:1
  - 12:3:1
  - 12:3:4
48. The number of base pairs per turn in the Z DNA are
- 12
  - 11
  - 10
  - 05
49. Which of the following events occur in a Lac Operon when lactose levels are high and glucose levels are low ?
- cAMP levels decrease, triggering binding of CAP to RNA polymerase.
  - cAMP activates CAP which binds to the lac promoter.
  - cAMP activates CAP which binds to lac repressor proteins.
  - CAP binds to the ribosome to prevent translation.
50. In Eukaryotes, the regulatory sequences that stimulate transcription even though located several base pairs upstream or downstream of the promoter are called
- Insulators
  - Enhancers
  - Promoters
  - Regulators

51. In the E.coli RNA polymerase holoenzyme the initiation of transcription is controlled by
- Core enzyme
  - Alpha factor
  - Beta factor
  - Sigma factor
52. The World Biofuel Day is celebrated on
- 10<sup>th</sup> August
  - 20<sup>th</sup> September
  - 15<sup>th</sup> December
  - 13<sup>th</sup> November
53. Which among the following is not a sedimentary nutrient cycle ?
- Calcium
  - Phosphorous
  - Nitrogen
  - Magnesium
54. The annual amount of carbon fixed in photosynthesis and changed to organic compounds is
- $24 \times 10^{13}$  Kg
  - $4 \times 10^{13}$  Kg
  - $40 \times 10^{13}$  Kg
  - $4 \times 10^{31}$  Kg
55. Identify the free living Diazotroph :
- Clostridium
  - Azotobacter
  - Rhizobium
  - Frankia
56. Which among the following has the highest Global Warming Potential?
- Oxygen
  - Carbon monoxide
  - Water Vapour
  - Sulphur Hexafluoride
57. In Paper Chromatography, amino acids are detected by spraying the chromatogram with
- Ninhydrin solution in acetone
  - Water
  - Sulphuric acid
  - Benzene
58. The working of a Spectrophotometer is based on
- Henry's law
  - Charles' law
  - Beer Lambert's Law
  - Heinrich Lambert Law
59. Which method uses pulses of high voltage for efficient genetic transformation ?
- Particle gun
  - Particle bombardment
  - Microprojectiles
  - Electroporation
60. This bacteria is also known as natural genetic engineer of plants :
- Agrobacterium tumefaciens*
  - Staphylococcus aureus*
  - Thiobacillus coccus*
  - Streptococcus bacillus*

**ROUGH WORK****SM-29580-A****8**  
■**50**