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FOR KUET EXAM PREPARATION

KUET 2022 Question Paper · M.Sc. Microbiology

EXAM	YEAR	TYPE	SUBJECT
KUET	2022	Question Paper	M.Sc. Microbiology

Sr. No. 233

ENTRANCE TEST-2022

SCHOOL OF BIOLOGICAL SCIENCES

MICROBIOLOGY

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series A

Roll No. :

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.

SEAL

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1. Consider the following statements about the cell theory :
   i. Cell theory was proposed by Scleiden and Schwann
   ii. Cells are generated from the dead material spontaneously
   iii. Cell is the basic unit of life.
   Choose the correct answer/s from the codes given below:
   (A) i, only
   (B) ii, iii only
   (C) i, iii only
   (D) iii, only
2. Archaebacteria are discovered by :
   (A) Edelman
   (B) Carl Woese
   (C) Ehrlich
   (D) Pasteur
3. Who is considered to be the father of medical microbiology ?
   (A) Koch
   (B) Pasteur
   (C) Jenner
   (D) Tatum
4. Who is /are associated with the discovery of conjugation in bacteria ?
   (A) Griffth
   (B) Lederberg and Tatum
   (C) Both (A) and (B)
   (D) Neither (A) nor (B)
5. Which of the following is considered to be a procaryotic ?
   (A) Protozoan
   (B) Helminth
   (C) Mold
   (D) Cyanobacteria
6. The function of Agar was seen in culture medium by :
   (A) Petri
   (B) Skoog
   (C) Pasteur
   (D) Hesse
7. The correct bionomial nomenclature of one of the important bacteria also known as super bug is:
   (A) *Pseudomonas Putida*
   (B) *Pseudomonas putida*
   (C) *pseudomonas Putida*
   (D) *pseudomonas putida*
8. The bacteria living at low temperatures are called as :
   (A) Mesophiles
   (B) Thermophiles
   (C) Psychrophiles
   (D) None of the above
9. In most multicellular species of algae, individuals produce special sex cells, called gametes that have following feature/s :
   (A) that contain only one set of chromosomes
   (B) the gametes from two individuals fuse sexually and can develop directly into offspring
   (C) they can form cells that subsequently produce spores
   (D) All of the above.
10. Bovine spongiform encephalopathy is also known by the name/s :
   (A) Mad dog disease
   (B) Mad cow disease
   (C) Kuru disease
   (D) All of the above

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11. Consider the following statements about the benefits of fungus to humans :

i. Human disease

ii. Toxins

iii. Hormone production

Choose the correct answer/s from the codes given below :

(A) i, only

(B) ii, iii only

(C) i, iii only

(D) iii only

12. Heterothallism is shown by :

(A) *Rhizopus*

(B) *Peziza*

(C) *Personospora*

(D) All of the above

13. Cytokines produced during immune response are :

(A) Proteins/glycoproteins

(B) Able to kill pathogens directly

(C) Often acting in synergy to induce immune response

(D) All of the above

14. Which system of the body due to hypersensitivity produces allergic reactions ?

(A) Digestive system

(B) Pulmonary system

(C) Immune system

(D) Circulatory system

15. Antibodies have usually _____ shape.

(A) R

(B) A

(C) Y

(D) M

16. _____ is not able to stimulate an immune response unless it is not bound to larger molecule.

(A) Virus

(B) Hapten

(C) Antigen

(D) Antibody

17. Which among the following molecule/s possess zero dipole moment ?

(A) Para-dichlorobenzene

(B) Carbon tetrachloride

(C) Both (A) and (B)

(D) Neither (A) nor (B)

18. Stability of DNA can be achieved through :

(A) Hydrophobic interactions

(B) Hydrogen bonds between A and T

(C) Hydrogen bonds between G and C

(D) All of the above

19. Entropy decreases in case of :

(A) Protein denaturation

(B) Rusting of iron

(C) Curdling of Milk

(D) Condensation of water vapours

20. The units of first order reaction rate constant can be :

(A) sec^{-1}

(B) moles/lit./sec

(C) moles/lit./sec^2

(D) $mole^{-1}$/lit/sec

21. What does enzyme activity refers to ?

(A) Potential energy of enzyme

(B) Enzyme specificity

(C) Catalytic ability

(D) Enzyme sensitivity

34. By what genetic analysis mechanism, genotype of a dominant plant can be determined ?
(A) Pedigree analysis
(B) Back cross
(C) Test cross
(D) Dihybrid cross

35. The role of σ-subunit of RNA polymerase is to :
(A) Specifies the site for transcription
(B) Initiate the replication
(C) Provide the contact between ribonuclease and DNA template
(D) Terminate the transcription

36. Consider the following statements about the Euchromatin :
i. It stains slightly
ii. It is partially condensed
iii. It is genetically active chromatin with genes.
Choose the correct answer/s from the codes given below :
(A) i, only
(B) ii, iii only
(C) i, ii, and iii
(D) iii only

37. Who had first sucessfully treated acute leukemia through the Hematopoietic Stem Cell Transplantation ?
(A) Thomas
(B) Henry
(C) George
(D) Edison

38. Mitosis occurs between ____ and ____ phases during the cell cycle.
(A) S, G1 phase
(B) G2, S phase
(C) G1, G2 phase
(D) G1, S phase

39. _____ technique is helpful in construction of Genomic libraries.
(A) Colony hybridization
(B) Shotgun approach
(C) PCR
(D) All of the above

40. The requirements for carrying out PCR are :
(A) Primers and buffer
(B) *Taq pol* amd $MgCl_2$
(C) DNA Template and dNTPs
(D) All of the above

41. In clinical biochemistry, working as a clinical scientist is to :
(A) Help in diagnosing and managing the disease through the analysis of blood, urine and other body fluids
(B) Produce and validate the results of chemical and biochemical analyses
(C) Both (A) and (B)
(D) Neither (A) nor (B)

42. An LDH isoenzymes test is used to find out the location, type, and severity of tissue damage. It can help diagnose a number of different conditions including :
(A) Recent heart attack
(B) Liver disease, including hepatitis and cirrhosis
(C) Both (A) and (B)
(D) Neither (A) nor (B)

43. Polypeptide namely _____ is important for the expression of MHC1 on the cell membrane.
(A) β_2 microglobin
(B) Interferons
(C) Interleukines
(D) Lymphokines

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44. HDLs considered as good cholesterol vehicles, are synthesized in :
(A) Liver
(B) Blood
(C) Intestines
(D) Pancrease

45. The _____ % water absorbed by herbaceous plants is lost during transpiration.
(A) 60
(B) 75
(C) 90
(D) 99

46. Consider the following statements about the Nitrogen fixation in plants by nitrifying bacteria :
i. They convert free nitrogen to nitrogen compounds
ii. They oxidize ammonia to nitrates
iii. They reduce nitrates to free nitrogen
Choose the correct answer/s from the codes given below :
(A) i, only
(B) ii only
(C) i, iii only
(D) ii, iii only

47. The CO_2 is converted to malate, a four carbon organic compound which is stored in the _____ where it is later transported to the chloroplast for conversion of malate to CO_2 for photosynthesis.
(A) Vacuoles
(B) Endoplasmic reticulum
(C) Chloroplast
(D) Mitochondria

48. One of the following hormones responsible for making RNA and proteins can be:
(A) Auxin
(B) Gibberellins
(C) Ethylene
(D) Cytokinin

49. _____ refers to the formation of embryoids from the pollen grains in the tissue culture medium.
(A) Double fertilization
(B) Cellular totipotency
(C) Organogenesis
(D) Test tube culture

50. More and more secondary metabolite production can be achieved through the hairy root cultures induced by transforming plant cells with :
(A) *Agrobacterium rhizogenes*
(B) *Agrobacterium tumefaciens*
(C) *Bacillus thuringiensis*
(D) Virus

51. Which among the following plant fibres is known as the "golden fibre" ?
(A) Coir
(B) Jute
(C) Hemp
(D) All of the above

52. *Brassica juncea* is the scentific name of which one of the following Rabi crops ?
(A) Peas
(B) Gram
(C) Wheat
(D) Mustard

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53. There is a great potential for fisheries in J&K UT and the Dal and Wular lakes alone produce about _____ % of the total fish production in Jammu and Kashmir.
(A) 50
(B) 60
(C) 70
(D) 95

54. The ratio between the energy flow at different points along the food chain, after expressing it in %age is called as the :
(A) Ecological gradient
(B) Ecological effciency
(C) Energy flow efficiency
(D) Relative ratio of energy flow

55. Among the following chemical species, one typically cycling in most localized areas is :
(A) Phosphorus
(B) Carbon
(C) Water
(D) Nitrogen

56. Low levels of DO (Dissolved oxygen) in water bodies lead to the death of fish and other oxygen dependent organisms due to :
(A) Offensive sludge
(B) Methane
(C) Hydrogen sulphide
(D) All of the above

57. In case of statistical analysis where there is a symmetrical distribution, then :
(A) Mean and Mode coincide
(B) Mode and Median coincide
(C) Mean, Mode and Median coincide
(D) Mean and Median coincide

58. Example of Non- probability sampling can be :
(A) Snow ball sampling
(B) Cluster sampling
(C) Stratified sampling
(D) Simple random sampling

59. The variance calculated for the observation having values 4.2, 4.3, 4.0 and 4.1 taken in the lab is :
(A) 0.27
(B) 0.28
(C) 0.30
(D) 0.31

60. The Chi square value for the data, where one has 8 red, 5 green, 12 orange, and 15 blue balls for testing the null hypothesis that the colors of the balls occur with equal frequency will be :
(A) 5.6
(B) 5.68
(C) 5.86
(D) 5.8

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