No. of Pages. 16

Code No.	Y – 3035

Register Number :

Name :

Time : 2 Hours

Max.Marks : 100

Entrance Examination for Admission to the P.G. Courses in the Teaching Departments, 2026

CSS

AQUATIC BIOLOGY AND FISHERIES/ZOOLOGY (PURE AND APPLIED)/INTEGRATIVE BIOLOGY

GENERAL INSTRUCTIONS

1. The Question Paper is having 100 Objective Questions, each carrying one mark.
2. The answers are to be marked **only** in the "**OMR Sheet**" provided.
3. **Negative marking** : **0.25 marks** will be deducted for each wrong answer .

INSTRUCTIONS FOR FILLING THE OMR SHEET

- The OMR sheet should not be folded or crushed.
- Use only blue/black ball point pen to fill the circles.
- Use of pencil is strictly prohibited.
- Circles should be darkened completely and properly.
- Cutting and erasing on this sheet is not allowed.
- Do not leave any stray marks on the sheet.
- Do not use marker or white fluid to hide the mark.
- WRONG METHODS

CORRECT METHOD

Choose appropriate answer from the options in the questions.

(100 × 1 = 100 marks)

1. Taxonomical hierarchy includes which correct order?
   A. Species → Genus → Family → Order
   B. Genus → Species → Family → Order
   C. Family → Genus → Species → Order
   D. Order → Family → Genus → Species

2. The organism *Paramecium* belongs to:
   A. Protista
   B. Fungi
   C. Plantae
   D. Monera

3. Canal system is a characteristic feature of:
   A. Cnidaria
   B. Porifera
   C. Annelida
   D. Mollusca

4. *Taenia solium* belongs to:
   A. Trematoda
   B. Cestoda
   C. Turbellaria
   D. Nematoda

5. Example of a pseudocoelomate:
   A. Earthworm
   B. Ascaris
   C. Hydra
   D. Starfish

6. Mouth parts of mosquito are adapted for:
   A. Chewing
   B. Sponging
   C. Piercing and sucking
   D. Biting

7. Evolutionary connecting link between annelids and arthropods:
   A. Peripatus
   B. Nereis
   C. Limulus
   D. Pila

8. Water vascular system is seen in:
   A. Mollusca
   B. Echinodermata
   C. Annelida
   D. Arthropoda

9. Retrogressive metamorphosis occurs in:
   A. Amphioxus
   B. Ascidia
   C. Salpa
   D. Oikopleura

10. Animal without jaws belongs to:
   A. Gnathostomata
   B. Agnatha
   C. Tetrapoda
   D. Pisces

11. Accessory respiratory organs are common in:
   A. Reptiles
   B. Birds
   C. Fishes
   D. Mammals

12. Poisonous snake among the following:
    A. Ptyas
    B. Lycodon
    C. Naja
    D. Eryx

13. Instrument used to measure absorbance of light:
    A. Microscope
    B. Centrifuge
    C. Spectrophotometer
    D. Microtome

14. Measure of central tendency:
    A. Variance
    B. Standard deviation
    C. Mean
    D. Range

15. Leibig's law of minimum relates to:
    A. Energy flow
    B. Limiting factors
    C. Population growth
    D. Succession

16. Match the following

a.	Entamoeba histolytica	1.	Amoebiais
b.	Plasmodium vivax	2.	Malaria
c.	Wuchereria bancrofti	3.	Filariasis
d.	Taenia solium	4.	Taeniasis

    A. a-1, b-2, c-3, d-4
    B. a-3, b-1, c-2, d-4
    C. a-2, b-3, c-1, d-4
    D. a-4, b-1, c-3, d-2

17. Mutation in promoter affects:
    A. Replication
    B. Transcription
    C. Translation
    D. Repair

18. Amphioxus shows:
    A. Temporary notochord
    B. Permanent notochord
    C. Vertebral column
    D. None

19. Competitive inhibition increases:
    A. Vmax
    B. Km
    C. Both (A) and (B)
    D. None

20. Population crash due to random event:
    A. Selection
    B. Drift
    C. Mutation
    D. Migration

21. Denaturation affects protein:
    A. Primary
    B. Secondary
    C. Tertiary
    D. DNA

22. Limiting factor removal leads to:
    A. Growth increase
    B. Death
    C. Stability
    D. Mutation

23. *Ascidia* shows:
    A. Direct development
    B. Retrogressive metamorphosis
    C. Progressive
    D. None

24. A mutation changes codon but not amino acid.
    A. Missense
    B. Silent
    C. Nonsense
    D. Frameshift

25. High CO_2 reduces Hb affinity due to:
    A. Haldane effect
    B. Bohr effect
    C. Root effect
    D. None

26. Match the following

a.	Glycolysis	1.	Cytoplasm
b.	Krebs cycle	2.	Mitochondria
c.	ETS		
d.	β-oxidation		

    A. a-1, b-2, c-2, d-2
    B. a-2, b-1, c-2, d-1
    C. a-1, b-1, c-2, d-2
    D. a-2, b-2, c-1, d-1

27. Accessory respiration in:
    A. *Clarias*
    B. *Anabas*
    C. Both (A) and (B)
    D. None

28. Gene therapy aims to:
    A. Cure disease
    B. Mutation
    C. Selection
    D. Drift

29. Meiosis error leads to:
    A. Mutation
    B. Aneuploidy
    C. Epistasis
    D. Polyploidy

30. Coral reefs indicate:
    A. Low diversity
    B. High diversity
    C. Stability
    D. Isolation

31. Operon present in:
    A. Prokaryotes
    B. Eukaryotes
    C. Both (A) and (B)
    D. None

32. Antibody nature:
    A. Lipid
    B. Protein
    C. DNA
    D. RNA

33. Hybridoma produces:
    A. Enzyme
    B. Antibody
    C. DNA
    D. Hormone

34. PCR enzyme:
    A. Ligase
    B. Taq polymerase
    C. Helicase
    D. Primase

35. Ecological succession leads to:
    A. Stability
    B. Change
    C. Diversity
    D. All

36. Match the following :

a. Southern	1. DNA
b. Northern	2. RNA
c. Western	3. Protein
d. PCR	4. Amplification

    A. a-1, b-2, c-3, d-4
    B. a-2, b-1, c-3, d-4
    C. a-1, b-3, c-2, d-4
    D. a-4, b-2, c-1, d-3

37. Mutation causes:
    A. Stability
    B. Variation
    C. Uniformity
    D. None

38. Bohr effect helps:
    A. Binding
    B. Release
    C. Transport
    D. Storage

39. Fish with accessory respiration:
    A. *Clarias*
    B. *Anabas*
    C. Both (A) and (B)
    D. None

40. Gene expression includes:
    A. Replication
    B. Transcription
    C. Translation
    D. (B) and (C)

41. Biodiversity loss causes:
    A. Stability
    B. Instability
    C. No effect
    D. Mutation

42. Synapse transmits:
    A. Electrical
    B. Chemical
    C. Both (A) and (B)
    D. None

43. Hormones act via:
    A. Receptors
    B. DNA
    C. RNA
    D. Protein

44. Kidney regulates:
    A. Water
    B. Salt
    C. pH
    D. All

45. Lysosomal defect causes:
    A. ATP increase
    B. Waste accumulation
    C. Mutation
    D. Repair

46. Predator removal causes
    A. Succession
    B. Trophic cascade
    C. Mutation
    D. Drift

47. Genetic drift affects:

A. Large populations
B. Small populations
C. Both (A) and (B)
D. None

48. Isolation leads to:

A. Mutation
B. Speciation
C. Drift
D. Selection

49. Evolution involves:

A. Change
B. Selection
C. Adaptation
D. All

50. Population growth curve:

A. J
B. S
C. Both (A) and (B)
D. None

51. Ecosystem stability depends on

A. Diversity
B. Interaction
C. Balance
D. All

52. Match the following

a.	Peripatus	1.	Arthropoda
b.	Limulus	2.	Mollusca
c.	Sepia	3.	Echinodermata
d.	Asterias	4.	Onychophora

A. a-4, b-1, c-2, d-3
B. a-1, b-4, c-2, d-3
C. a-4, b-2, c-1, d-3
D. a-3, b-1, c-2, d-4

53. Vaccine includes:

A. Passive
B. Active
C. Innate
D. None

54. Complement system:

A. Defense
B. Digestion
C. Transport
D. Storage

55. Blood clotting uses:

A. Platelets
B. Fibrin
C. Enzymes
D. All

56. Respiration pigment :

A. Hemoglobin
B. Myoglobin
C. Both (A) and (B)
D. None

57. Gene distance increases with:

A. Low recombination
B. High recombination
C. No recombination
D. Mutation

58. Variation arises from:

A. Mutation
B. Recombination
C. Both (A) and (B)
D. None

59. Chromosome mapping uses:

A. Linkage
B. Distance
C. Crossing over
D. All

60. Transgenic organism has:

A. Extra gene
B. Mutation
C. Deletion
D. None

61. Cloning produces:

A. Variation
B. Identical copy
C. Mutation
D. Hybrid

62. Frame shift mutation caused by:

A. Substitution
B. Insertion/deletion
C. Duplication
D. Inversion

63. Coral bleaching due to:

A. Heat
B. Pollution
C. Stress
D. All

64. *Peripatus* is:

A. Parasite
B. Missing link
C. Predator
D. Herbivore

65. Food chain shows:

A. Energy flow
B. Nutrient flow
C. Both (A) and (B)
D. None

66. Limiting factor controls:

A. Growth
B. Survival
C. Distribution
D. All

67. Photosynthesis produces:

A. O_2
B. Glucose
C. Both (A) and (B)
D. None

68. Zoogeography studies:

A. Distribution
B. Behaviour
C. Physiology
D. Genetics

69. Synaptic transmission failure affects:

A. Axon
B. Synapse
C. Myelin
D. Nucleus

70. Adaptation improves:

A. Survival
B. Fitness
C. Reproduction
D. All

71. Natural selection favors:

A. Strong
B. Fit
C. Large
D. Small

72. Speciation produces:

A. Variation
B. New species
C. Mutation
D. None

73. BLAST high E-value means:
    A. High similarity
    B. Low similarity
    C. Exact match
    D. None

74. B-cell deficiency affects:
    A. Cellular immunity
    B. Humoral immunity
    C. Innate
    D. Complement

75. Transgenic organism expresses:
    A. Mutation
    B. Foreign gene
    C. Deletion
    D. Hybrid

76. Genetic drift strongest in:
    A. Large population
    B. Small population
    C. Both (A) and (B)
    D. None

77. Which of the following organisms is commonly used as a biological indicator of water pollution?
    A. Hydra
    B. Star fish
    C. Tubifex worm
    D. Sea anemone

78. Match the following

a.	Naja	1.	Poisonous
b.	Ptyas	2.	Non-poisonous
c.	Vipera		
d.	Dryophis		

    A. a-1, b-2, c-1, d-2
    B. a-2, b-1, c-2, d-1
    C. a-1, b-1, c-2, d-2
    D. a-2, b-2, c-1, d-1

79. Adaptive radiation causes:
    A. Diversity
    B. Uniformity
    C. Stability
    D. None

80. Ecotone shows:
    A. Edge effect
    B. No diversity
    C. Isolation
    D. Stability

81. A population of frogs shows logistic growth. When population reaches 80% of carrying capacity (K), growth rate begins to decline sharply.
What is the most probable reason?

A. Increase in mutation rate
B. Density-dependent factors
C. Increase in natality
D. Decrease in competition

82. A researcher mutates a bacterial operon such that the repressor protein cannot bind to the operator.
What will be the outcome?

A. Operon permanently off
B. Operon permanently on
C. No transcription
D. No translation

83. In a PCR experiment, amplification fails after multiple cycles. All reagents are present, but temperature cycling is faulty.
Which step is most affected?

A. Annealing
B. Denaturation
C. Extension
D. All

84. A patient has low hemoglobin affinity for oxygen at high CO_2 levels.
Which phenomenon explains this?

A. Haldane effect
B. Bohr effect
C. Root effect
D. Chloride shift

85. A population shows sudden decrease due to environmental disturbance, but later recovers.
This represents:

A. Exponential growth
B. Logistic growth
C. Population fluctuation
D. Carrying capacity

86. A mutation causes lysosomal enzymes to be absent.
What will be the major cellular effect?

A. Increased protein synthesis
B. Accumulation of waste
C. Increased ATP production
D. Reduced DNA replication

87. A gene mutation alters a codon but produces the same amino acid.
This is:

A. Missense mutation
B. Nonsense mutation
C. Silent mutation
D. Frameshift mutation

88. In a food chain, removal of top predator leads to overgrowth of herbivores.
This is an example of:

A. Ecological succession
B. Trophic cascade
C. Carrying capacity
D. Limiting factor

89. A scientist introduces a gene into bacteria using plasmid vectors.
Which property is essential for the plasmid?

A. Ribosome binding site
B. Origin of replication
C. Lysosome
D. Centriole

90. A fish species survives in low oxygen water using accessory respiratory organs.
Which adaptation is most relevant?

A. Increased gill surface
B. Air-breathing organs
C. Reduced metabolism
D. High hemoglobin

91. A student observes increased recombination frequency between two genes.
What does this indicate?

A. Genes are closer
B. Genes are far apart
C. Genes are identical
D. Genes are linked strongly

92. During meiosis, failure of chromosome separation occurs.
This leads to:

A. Mutation
B. Aneuploidy
C. Polyploidy
D. Epistasis

93. A coral reef ecosystem shows bleaching due to temperature rise.
What is directly affected?

A. Coral skeleton
B. Symbiotic algae
C. Fish population
D. Water salinity

94. A patient lacks B-cells.
Which immune response is affected?

A. Cellular immunity
B. Humoral immunity
C. Innate immunity
D. Complement system

95. A gene is expressed only in presence of inducer molecule.
This is characteristic of:

A. Repressible operon
B. Inducible operon
C. Structural gene
D. Regulatory gene

96. A sudden drop in population due to random events is:

A. Natural selection
B. Genetic drift
C. Mutation
D. Migration

97. A protein loses function when tertiary structure is disrupted.
Which factor is most responsible?

A. DNA mutation
B. Denaturation
C. Replication
D. Transcription

98. A parasite completes part of its life cycle in mosquito and part in human.
This indicates:

A. Direct life cycle
B. Indirect life cycle
C. Parthenogenesis
D. Asexual reproduction

99. A neuron fails to transmit impulse due to lack of neurotransmitter.
Which process is affected?

A. Repolarization
B. Synaptic transmission
C. Action potential
D. Myelination

100. A population reaches equilibrium despite environmental changes.
This indicates:

A. Instability
B. Homeostasis
C. Mutation
D. Drift

ROUGH WORK

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