

Booklet Code : A

T-13

ENTRANCE EXAMINATIONS – 2019

M.Sc. Animal Biology & Biotechnology

Hall Ticket No.

Time :2 hours

Max. Marks : 100

INSTRUCTIONS: PLEASE READ BEFORE ANSWERING!

- Enter your hall ticket number on this sheet and the answer (OMR) sheet.
- Answers have to be marked on the OMR answer sheet following the instructions provided there upon. Make sure that you have clearly mentioned the Booklet Code (A or B or C) on your OMR sheet.
- Hand over OMR answer sheet at the end of the examination.
- All questions carry one mark each. Answer all, or as many as you can.
- 0.33 mark will be deducted for every wrong answer.
- There are a total of 11 pages in this question paper. Answer sheet (OMR) will be provided separately. Check this before you start answering.
- The question paper consists of Part A and Part B. The marks obtained in Part A will be taken in consideration in case of a tie i.e., when more than one student gets equal marks, to prepare the merit list.

PART "A"

1. Nucleosome consists of
 - A) 146 bp DNA wrapped around H2A, H2B, H3 and H4
 - B) 164 bp DNA wrapped around H2A, H2B, H3 and H4
 - C) 146 bp DNA wrapped around 2 copies each of H2A, H2B, H3 and H4
 - D) 164 bp DNA wrapped around 2 copies each of H2A, H2B, H3 and H4

2. An example of hemimetabolous insect is
 - A) *Oncopeltus fasciatus*
 - B) *Vespula vulgaris*
 - C) *Musca domestica*
 - D) *Apis indica*

3. Which of the following compounds have highest dipole moment?
 - A) Dichloromethane
 - B) Chloroform
 - C) Chloromethane
 - D) Carbon

4. Autophagy is facilitated by
A) Ribosomes
B) Nucleus
C) Lysosomes
D) Mitochondria
5. Fats and oils are
A) Monoesters of glycerol
B) Diesters of glycerol
C) Triesters of glycerol
D) Diesters of glycol
6. Function of GABA in central nervous system is
A) Neuronal inhibition
B) Neuronal activation
C) Glial cell inhibition
D) Glial cell activation
7. The total entropy of the universe is
A) Always increasing
B) Neither increasing nor decreasing
C) Always decreasing
D) Either increasing or decreasing
8. Malaria is transmitted by one of the following species of mosquito
A) *Culex*
B) *Aedes*
C) *Anopheles*
D) *Albuginosus*
9. Polymerase Chain Reaction was invented by
A) Kary Mullis
B) Francis Crick
C) David Baltimore
D) Tim Hunt
10. Which one of the following compounds will give a positive iodoform test?
A) Benzaldehyde
B) 2-Pentanone
C) 3-Hexanone
D) 3-Pentanone
11. Which one of the following is an animal sterol?
A) Ergosterol
B) Stigma sterol
C) Sitosterol
D) Cholesterol
12. The SI unit of radioactivity is
A) Hertz
B) Lumen
C) Becquerel
D) Telsa
13. All of the following are CD4+ cells, except
A) Monocytes
B) T-helper cells
C) T-cytotoxic cells
D) Macrophages
14. Which one of the following metal ions is required for the enzymatic cleavage of type II restriction endonucleases?
A) Ca^{2+}
B) Mg^{2+}
C) Al^{+3}
D) Mn^{+2}

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25. If the electron in a hydrogen atom drops from the $n=6$ to the $n=4$ level, the radiation emitted is in which series of lines in the spectrum of atomic hydrogen

- A) Lyman
- B) Balmer
- C) Paschen
- D) Brackett

PART "B"

26. A living fossil found only in New Zealand is

- A) Tautara
- B) Agamid
- C) Trionchid
- D) Emydid

27. In arterial blood, CO_2 is majorly transported as

- A) Bicarbonate
- B) Carbamino hemoglobin
- C) Carbonic acid
- D) Carboxyhemoglobin

28. Hypocalcemia is caused due to under secretion of

- A) Thyroxine
- B) Parathormone
- C) Calcitonin
- D) Glucagon

29. When ethylene glycol is heated with concentrated HNO_3 it forms

- A) Oxalic acid
- B) Ethylene oxide
- C) Dioxane
- D) Diethylene glycol

30. "Red tides" are caused by large numbers of

- A) Dinoflagellates
- B) Zooflagellates
- C) Green algae
- D) Diatoms

31. DNA is highly viscous because of

- A) Large ratio of length versus diameter
- B) Coiling of two strands around an axis
- C) DNA interacting with histone proteins
- D) Nitrogenous bases of each strand held by hydrogen bonds

32. The temperature to which a gas must be cooled before it can be liquefied by compression is called

- A) Boyle's temperature
- B) Critical temperature
- C) Liquefaction temperature
- D) Inversion temperature

33. Chaperon does one of the following functions

- A) Synthesizes proteins
- B) Refolding of proteins
- C) Unfolds proteins
- D) Degradation of proteins

34. Chromosome painting technique is also known as

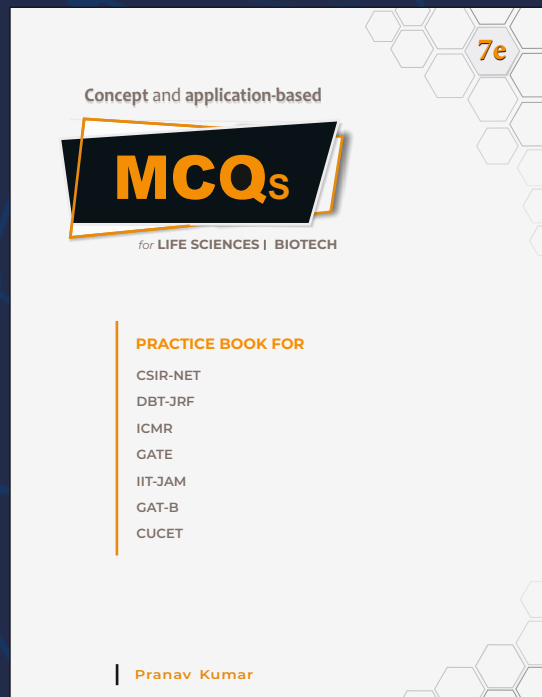
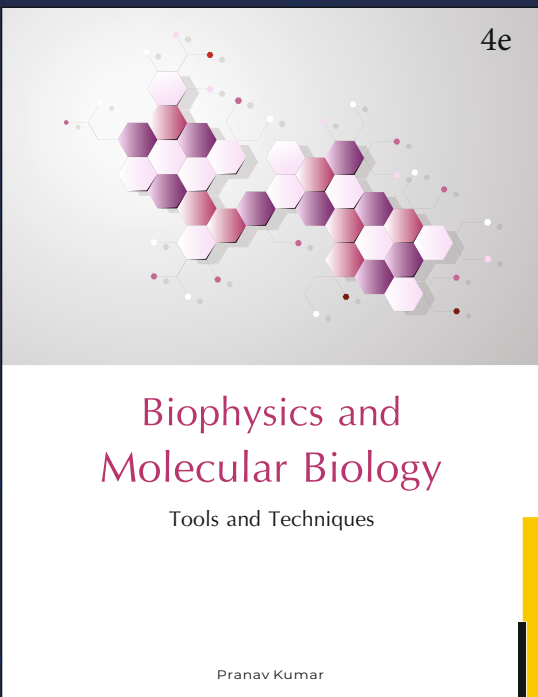
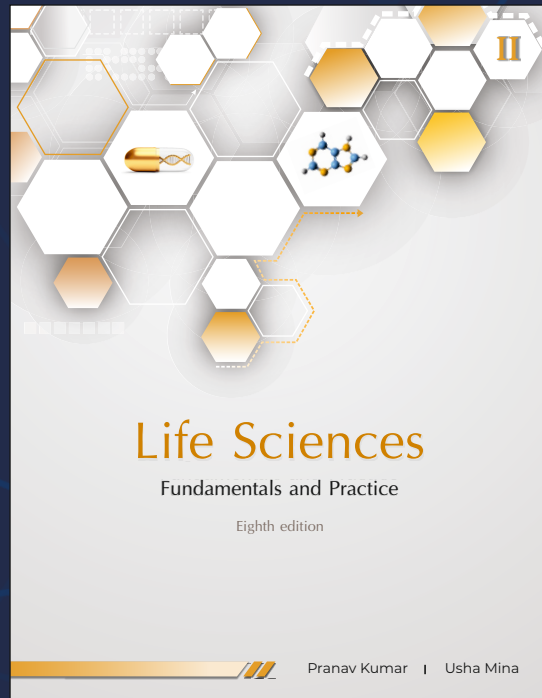
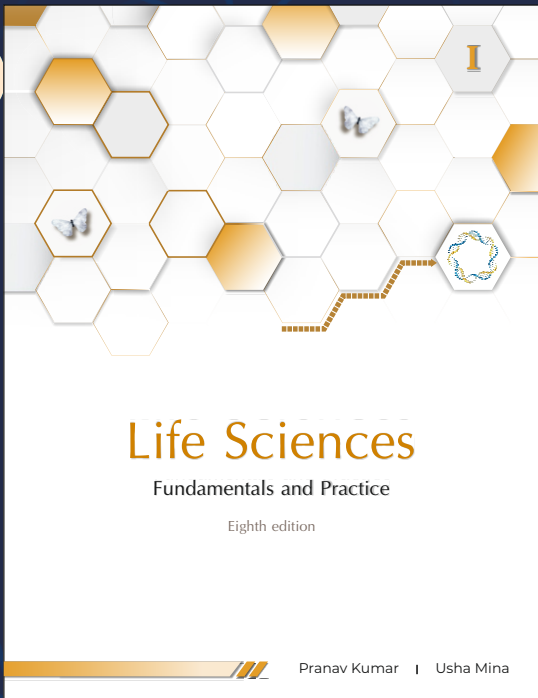
- A) ChIP
- B) FISH
- C) ISH
- D) Karyotyping

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55. In humans and mammals the main nitrogenous waste is
A) Urea
B) Uric acid
C) Ammonia
D) Amino acids
56. Which of the following enzymes is present in the snake venom?
A) Phospholipase A1
B) Phospholipase A2
C) Phospholipase B
D) Phospholipase D
57. Use and disuse theory was elaborated by
A) Jean-Baptist Lamarck
B) Charles Darwin
C) J B S Haldane
D) August Weisman
58. Which of the following is a carbohydrate with no nutritional value
A) Glycogen
B) Starch
C) Dextrin
D) Cellulose
59. Most important reason for the declining trend of biodiversity is
A) Habitat destruction
B) Habitat pollution
C) Exotic species introduction
D) Over exploitation
60. Kinetic energy of an article of 20g is 4 joule while that of another article of same mass is 16 joules. Hence velocity ratio of their motion is
A) 1:4
B) 4:1
C) 1:2
D) 2:1
61. A virus mediated delivery of DNA into mammalian cells is called
A) Transformation
B) Transfection
C) Transduction
D) Transversion
62. The term "Open mitosis" is used in the following context
A) Nuclear envelop breaks down before the chromosomes separate
B) Nuclear envelop breaks down after the chromosomes separate
C) Nuclear division happens without cytokinesis
D) Segregation of homologous chromosomes without chiasmata formation
63. The following amino acid does not contribute the fluorescence of a protein
A) Tryptophan
B) Tyrosine
C) Serine
D) Phenylalanine
64. Which one of the following is not a hallmark of cancer?
A) Self-sufficiency in growth signals
B) Insensitivity to anti-growth signals
C) Sustained angiogenesis
D) Halted angiogenesis

75. Cytochalasins will interfere with actin polymerization. If cytochalasin is added to cultured mammalian cells that have just begun mitosis, what is most likely to happen?
- A) Cells with arrest at metaphase B) Mitosis will complete but cytokinesis gets arrested
C) Cells will arrest at telophase D) Mitosis will not proceed beyond prophase
76. Which one of the following is incorrect about the secondary structure of proteins?
- A) α -helix and β -sheet are examples of secondary structure B) Aromatic amino acids participate in β -sheet formation
C) Intermolecular and intramolecular hydrogen bonds are important in stabilizing secondary structure D) Glycine and Alanine are abundant in β -pleated sheets
77. With regard to DNA quantity, the correct order for different phases of cell cycle is
- A) $G1 > S > G2$ B) $S > G2 > G1$
C) $G2 > S > G1$ D) $G1 < G2 < S$
78. Effect of temperature on viscosity is given by
- A) Hole theory B) Arrhenius theory
C) Adsorption theory D) Collision theory
79. Which one of the following is a substrate specific enzyme?
- A) Hexokinase B) Thiokinase
C) Lactase D) Decarboxylase
80. Conjugate base of Zn^{2+} is
- A) $Zn(OH)^+$ B) $Zn(OH)_2$
C) ZnO D) $Zn(H_2O)^{2+}$
81. The three domains of life in biology are
- A) Archaea, Eukarya, Bacteria B) Protista, Eubacteria, Eukarya
C) Archaea, Eubacteria, Eukarya D) Prokarya, Bacteria, Archaea
82. The first immunoglobulin heavy chain that is expressed on the surface of newly produced B cells is
- A) IgA B) IgD
C) IgG D) IgM
83. A gametophyte is a _____ plant that produces gametes by _____
- A) Haploid; meiosis B) Diploid; meiosis
C) Haploid; mitosis D) Diploid; mitosis
84. The pathway for glucose synthesis by non-carbohydrate precursors is
- A) Glycogenesis B) Glycolysis
C) Gluconeogenesis D) Glycogenolysis



MSc Entrance Exam Combo Set Biotechnology & Life Sciences



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Entrance Examinations - 2019

School/Department/Centre : School of Life Sciences, Dept of Animal Biology

Course/Subject : M.Sc Animal Biology and Biotechnology (Set A revised)

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
1	C	26	A	51	B	76	B
2	A	27	A	52	B	77	C
3	C	28	B	53	B	78	A
4	C	29	A	54	D	79	C
5	C	30	A	55	A	80	A
6	A	31	A	56	B	81	A
7	A	32	B	57	A	82	D
8	C	33	B	58	D	83	C
9	A	34	B	59	A	84	C
10	B	35	A and D *	60	C	85	A
11	D	36	A	61	C	86	B
12	C	37	C	62	A	87	C
13	C	38	D	63	C	88	B
14	B	39	A	64	D	89	C
15	A	40	A	65	B	90	B
16	B	41	C	66	D	91	C
17	B	42	B	67	A	92	C
18	A	43	B	68	B	93	A
19	A	44	A	69	D	94	C
20	C	45	A	70	D	95	C
21	A	46	D	71	B	96	A
22	B	47	B	72	D	97	A
23	C and D *	48	D	73	B	98	D
24	B	49	C	74	A	99	D
25	D	50	C	75	B	100	D

Note/Remarks : * For Q. No 23 and 35 benefit will be given to all candidates

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