V12-Bio

Virudhunagar District Schools

Mid Term Test - March 2021

Standard 12

BIOLOGY

Time: 1.30 Hrs. Marks: 50

BIOLOGY-BOTANY Marks: 25

Section - A

I. Choose and write the correct answer with option code: 10×1=10

1) In Haplopappus gracilis, number of chromosomes in cells of nucellus is 4. What will be the chromosome number in primary endosperm cell?
   a) 8 b) 12 c) 6 d) 2
2) The dominant epistasis ratio is
   a) 9:3:3:1 b) 12:3:1 c) 9:3:4 d) 9:6:1
3) **Match List I with List II:**

List I		List II
A. A pair of chromosomes extra with diploid	-	i) Monosomy
B. One chromosome extra to the diploid	-	ii) Tetrasomy
C. One chromosome loses from diploid	-	iii) Trisomy
D. Two individual chromosomes lose from diploid	-	iv) Double monosomy

   a) A-i, B-iii, C-ii, D-iv b) A-ii, B-iii, C-iv, D-i
   c) A-ii, B-iii, C-i, D-iv d) A-iii, B-ii, C-i, D-iv
4) Restriction enzymes are
   a) Not always required in genetic engineering.
   b) Essential tools in genetic engineering.
   c) Nucleases that cleave DNA at specific sites.
   d) b and c
5) Choose the correct statement about tenuinucellate ovule
   a) Sperogeneres cell is hypodermal.
   b) Ovules have fairly large nucellus.
   c) Sperogenous cell is epidermal.
   d) Ovules have single layer of nucellus tissue.
6) Which of the following represent megagametophyte?
   a) Ovule b) Embryosac c) Nucellus d) Endosperm
7) Which Mendelian idea is depicted by a cross in which the F_1 generation resembles both the parents?
   a) Incomplete dominance b) Law of dominance
   c) Inheritance of one gene d) Co-dominance
8) Due to incomplete linkage in maize, the ratio of parental and recombinants are
   a) 50:50 b) 7:1:1:7 c) 96.4:3.6 d) 1:7:7:1
9) ECORI cleaves DNA at
   a) AGGGTT b) GTATATC c) GAATTC d) TATAGC
10) In which techniques Ethidium Bromide is used
   a) Southern Blotting b) Western Blotting
   c) Polymerase Chain Reaction d) Agarose Gel Electroporosis

Section - B

II. Answer ANY FIVE questions: 5×2=10

11) What is endothelium?
12) Draw and label the parts of pollen grain.
13) Define Genetics.
14) What is the difference between mis sense and non sense mutation.
15) Name the chemicals used in gene transfer.
16) What is gene mapping?
17) Differentiate incomplete dominance and codominance.
18) List out the functions of tapetum.

Section - C

III. Answer the following questions: **1×5=5**

19) With a suitable diagram explain the structure of an ovule.

(OR)

Explain the mechanism of crossing over.

BIOLOGY-ZOOLOGY

Marks: 25

I. Answer the following: **10×1=10**

1) In which mode of reproduction variations are seen
   a) Asexual b) Parthenogenesis c) Sexual d) Both a and b
2) The male sex hormone testosterone is secreted from
   a) Sertoli cells b) Leydig cell c) Epididymis d) Prostate gland
3) The most important hormone in intiating and maintaining lactation after birth is
   a) Prolactin b) FSH c) Oestrogen d) Oxytocin
4) The process which the sperm undergoes before penetrating the ovum is
   a) Spermiation b) Cortical reaction
   c) Spermiogenesis d) Capacitation
5) Match Column I with Column II and select the correct option from the codes given below:

Column I	Column II
A. Copper releasing IUD	i) LNG-20
B. Hormone releasing	ii) Lippes loop IUD
C. Non medicated IUD	iii) Saheli
D. Mini pills	iv) Multiload 375

   a) A (iv), B (ii), C (i), D (ii) b) A (iv), B (i), C (iii), D (ii)
   c) A (i), B (iv), C (iii), D (ii) d) A (iv), B (i), C (ii), D (iii)
6) A contraceptive pill prevents ovulation by
   a) blocking follopian tube
   b) inhibiting release of FSH and LH
   c) stimulating release of FSH and LH
   d) causing immediate degeneration of released ovum
7) ABO blood group in man is controlled by
   a) Multiple alleles b) Lethal genes
   c) Sex linked genes d) Y-lined genes
8) Which of the following phenotypes in the progeny are possible from the parental combination A×B?
   a) A and B only b) A, B and AB only
   c) A, B, AB and O d) AB only
9) Father of a child is colourblind and mother is carrier for colourblindness the probability of the child being colourblind
   a) 50% b) 25% c) 100% d) 75%
10) Co-dominant blood group is
   a) A b) AB c) B d) O

II. Answer any five questions: **5×2=10**

11) How is juvenile phase different from reproductive phase?
12) What is parthenogenesis? Give two examples from animals.
13) Expand the acronyms (a) FSH (b) hCG.
14) Placenta is an endocrine tissue justify.
15) How is polyspermy avoided in humans?
16) Differentiate foeticide and infanticide.
17) What is Amniocentesis?
18) What are the applications of Karyotyping? (any two)

III. Answer the following: **1×5=5**

19) Describe the structure of the human ovum with a neat labelled diagram.

(OR)

Explain the genetic basis of ABO blood grouping in man.
