

2020

Time : 3 hours

Full Marks : 100

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer five questions, selecting at least two from each Group in which

Q. No. 1 is compulsory.

1. Choose the correct answer from the options given below : 1×20 = 20

(a) Who proposed the Fluid Mosaic Model ?

- (i) Robertson
- (ii) Singer and Nicolsan
- (iii) Gorter and Grendel
- (iv) None of these

(b) Electron Microscope was invented by :

- (i) Johnssan and Johnssan
- (ii) Knoll and Ruska
- (iii) Leeuwenhoek
- (iv) None of these

(c) Watson and Crick gave the molecular Model of DNA in :

- (i) 1979
- (ii) 1973
- (iii) 1953
- (iv) 1943

(d) Prokaryote cells lack :

- (i) Nucleus
- (ii) Mitochondria
- (iii) ER
- (iv) All of these

(e) In Turner's Syndrome the set of chromosome is :

- (i) XXX
- (ii) XXY

- (iii) XO
- (iv) XYY
- (f) The theoretical distribution of continuous variable is called :
 - (i) Binomial distribution
 - (ii) Discontinuous distribution
 - (iii) Poisson distribution
 - (iv) Normal distribution
- (g) The square of some of deviation divided by number of observation is called :
 - (i) Standard deviation
 - (ii) Standard error
 - (iii) Variance
 - (iv) None of these
- (h) The reciprocal of arithmetic mean is called :
 - (i) Geometric mean
 - (ii) Harmonic mean
 - (iii) Both (i) and (ii)
 - (iv) None of these

- (i) During protein synthesis adaptor RNA attaches particular amino acid at its :
 - (i) TUC end
 - (ii) DHU end
 - (iii) CCA end
 - (iv) G end
- (j) RNA polymerase is a complex protein which is made up of :
 - (i) 3 polypeptide chains
 - (ii) 4 polypeptide chains
 - (iii) 5 polypeptide chains
 - (iv) 6 polypeptide chains
- (k) In Drosophila sex is determined by the :
 - (i) Autosome
 - (ii) Sex chromosome
 - (iii) Both autosome and sex chromosome
 - (iv) y chromosome
- (l) Chromosomal combination in Klinefelters syndrome is :
 - (i) XXY
 - (ii) XYY

- (iii) XO
- (iv) None of these
- (m) The characters which appears physically in an animal is :
- (i) Genotype
- (ii) Phenotype
- (iii) Heterotype
- (iv) Karyotype
- (n) Which of the following is a test cross ?
- (i) $Tl \times Tt$
- (ii) $TT \times Tt$
- (iii) $TT \times TT$
- (iv) $Tt \times tt$
- (o) Honey bee exhibit parthenogenesis and the unfertilized eggs develop into :
- (i) Queens
- (ii) Workers
- (iii) Drones
- (iv) None of these

- (p) Genes for colourblindness are carried in :
- (i) Eye cells
- (ii) Body cells
- (iii) Sex cells
- (iv) None of these
- (q) Introduction of foreign gene for improving genotype is done under the process of :
- (i) Tissue culture
- (ii) Immunization
- (iii) Genetic engineering
- (iv) None of these
- (r) A man with blood group B marries a women with blood group A and their first child is having group B, then what will be genotype of this child ?
- (i) $1^{A_1}1^B$
- (ii) $1^{B_1}1^B$
- (iii) 1^3e
- (iv) 1^{A_i}

(s) The parts controlled by genes located on x chromosome of human beings are said to be :

- (i) Sex limited
- (ii) Sex linked
- (iii) Sex influenced
- (iv) None of these

(t) Sex in man is determined by :

- (i) Haplo-diploid theory
- (ii) Chromosome theory
- (iii) Sex influenced theory
- (iv) Genic balance theory

Group – A

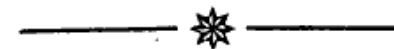
- 2. Give an account of working principle and magnifying power of an Electron Microscope. 5+15 = 20
- 3. Give an account of structure and function of Lysosome. 12+8 = 20
- 4. Describe the ultrastructure and functions of Golgi Complex. 12+8 = 20
- 5. Describe the essential parts and functioning of a computer with suitable diagrams. 12+8 = 20

UO – 113/4 (7) (Turn over)

Group – B

- 6. Give an account of structure and replication of DNA. 10+10 = 20
- 7. What is Biotechnology ? Describe, in detail, about its applications and products made for human welfare. 5+10+5 = 20
- 8. What is sex linked inheritance ? Describe the inheritance of sex linked disease in man with suitable examples. 5+15 = 20
- 9. Give an account of structure and function of eukaryotic chromosome. 10×2 = 20
- 10. Write short notes on any **two** of the following : 10×2 = 20

- (a) ABO Blood group
- (b) Monohybrid cross
- (c) Tools of Genetic engineering
- (d) Artificial feeding in pisciculture pond



UO – 113/4 (1,500) (8) AA(H-3) — Z (6)