Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – June / July 2021
II Semester

Class: I PG **Time : 3 Hours**
Major: Biotechnology **Max Marks : 100**

20MBTC07 Genetics

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Entire set of genes in an organism is called _____ CO1K1
   a. Gene b. Genome c. Cell d. organization

2. Chromosome pairs separate during _____ CO2K3
   a. mitosis b. meiosis c. Breakage d. rupture

3. The color and height of the plant would determine that it is a _____ study. CO2K2
   a. monohybrid b. neutral c. Test cross d. dihybrid

4. Tendency to resemble parents is known as _____ CO2K3
   a. heriditary b. trait c. organization d. allele

5. The crossing of F1 to any of the parent is known as _____ CO4K4
   a. back cross b. Test cross c. gene d. allele

6. Law of dominanace was give by _____ CO4K3
   a. Karl b. Mendel c. Pipper d. De Vries

7. Eukaryotes contain ___ ribosome unit. CO3K3
   a. 40 S b. 30 S c. 70 S d.80S

8. Down syndrome is defective in which chromosome ? CO4K5
   a. 20 b. 21 c. 22 d. 23

9. Specialized proteins found in nucleosome is called _____. CO3K3
   a. histones b. histine c. Histidine d. Amino acid

10. _____ results in mental retardation CO4K5
    a. DX disease b. Down syndrome c. DMD d. Klinefelter

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. Indicate what is meant by co dominance with an example?	CO2K3
(or)	
11.b. Explain dihybrid cross with an example.	CO2K3
12.a. Report epistasis with illustration and example.	CO2K2
(or)	
12.b. Deduce the meaning of dosage compensation.	CO4K3
13.a. Explain gene mapping with an example.	CO3K3
(or)	
13.b. Illustrate crossing over and discuss briefly.	CO2K3
14.a. Write about transposable elements in bacteria.	CO2K4
(or)	
14.b. Discuss polyploidy and aueploidy	CO3K3
15.a. Report what is population genetics in short.	CO4K3
(or)	
15.b. Elaborate on mutation and mutagen.	CO4K5

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Give an outline on pedigree analysis and chart.	CO2K2
(or)	
16.b. Explain basic principles of inheritance.	CO1K2
17.a. Discuss about banding patterns in chromosomes	CO2K3
(or)	
17.b. Illustrate and explain the chromosome structure.	CO2K3
18.a. Explain transformation and conjugation in bacteria.	CO3K3
(or)	
18.b. Discuss the molecular mechanism of molecular mutations.	CO3K5
19.a. Explain DNA damage at molecular level.	CO4K4
(or)	
19.b. Determine oncogene and tumor suppressor genes.	CO3K4
20.a. Report on sex linked genes and sex determination.	CO3K3
(or)	
20.b. Indicate chromosome alteration and sister chromatid exchange.	CO4K5

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