

SEAT No \_\_\_\_\_

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[110]

SARDAR PATEL UNIVERSITY  
T.Y.B.Sc. SEMESTER-5  
GENETICS AND BIOTECHNOLOGY  
USO5CZOO23

DATE: 28/12/2020, Monday

TIME: 2-00 to 4-00 pm.

MARKS: 70

Q-1 Multiple choice questions

(10)

1. The phenotypic ratio obtained due to dominant epistasis is \_\_\_\_\_  
a) 12:3:1      b) 9:3:4      c) 9:7      d) 13:3
2. In plants recessive lethal alleles produce \_\_\_\_\_  
a) Gigantism      b) albinism      c) short      d) none of the above
3. Experimental proof for deletion was obtained by \_\_\_\_\_  
a) Stadler      b) Bridges      c) Stansfield      d) none of the above
4. The bar trait of *Drosophila* is associated with duplication of a segment of X Chromosome.  
a) deletion      b) duplication      c) inversion      d) translocation
5. Monoploidy has a \_\_\_\_\_ basic set of chromosome  
a) Double      b) single      c) triple      d) none
6. Allopolyploidy is a result of doubling of chromosome in F1 hybrid from two \_\_\_\_\_.  
a) same species      b) different species      c) same genus      d) different genus
7. Down's syndrome is an example of trisomy  
a) Nullisomy      b) monosomy      c) trisomy      d) tetrasomy
8. In an electron microscopy short wavelength of beams of \_\_\_\_\_ are accelerated from heated metal wire  
a) Light      b) fluorescent light      c) electrons      d) none of the
9. Cell culture contains \_\_\_\_\_  
a) stem cells      b) precursor cells      c) differentiated cells  
d) all the three
10. The \_\_\_\_\_ that induce cancer are called transforming viruses.  
a) DNA virus      b) RNA virus      c) none of the above

Q-2 Fill in the blanks and true or false

(8)

1. The purple colored flowers in sweet pea *Lathyrus odoratus* are produced due to \_\_\_\_\_.
2. Haemophilia is caused by \_\_\_\_\_ genes.
3. The resultant pairs of homologous chromosomes due to synapsis are called \_\_\_\_\_.
4. The substitution mutation which involves the replacement of purine with pyrimidine is called \_\_\_\_\_.

[1]

(P.T.O.)

**True or False**

1. The non coding sequence are called exons.
2. Sub cultured primary culture gives cell line.
3. Normal fertility the sperm concentration in human semen should be 15-20 million per ml.
4. The tumour having the ability to grow indefinitely and invade surrounding healthy tissues is called benign.

**Q-3 Short Questions (Answer any 10) (20)**

1. Define intra allelic or allelic genetic interaction.
2. What is hypostatic gene.
3. Define linkage and crossing over .
4. What are kappa particles
5. Define Duplication and inversion
6. What is the function of microtome
7. Mention the uses of Radioimmunoassay
8. What is the function of sense strand
9. What is RNA splicing
10. What are Shine Dal garno sequence
11. What is a substrate
12. Define cancer

**Q-4 Long answer questions (Answer any 4)**

**(32)**

1. Write a short note on (8)
  - a) Dominant epistasis
  - b) Duplicate recessive genes or complimentary genes.
2. Write a short note on (8)
  - a) Shell coiling in Lemnea
  - b) Kappa particles in Paramecium.
3. Write a short note on the types of structural changes in chromosomes due to Mutation (8)
4. Describe Eugenics .Describe in brief the positive and negative eugenics (8)
5. Describe in brief protein synthesis in prokaryotes (8)
6. Write a short note on (8)
  - a) Electron microscopy
  - b) Radioimmunoassay
7. Write a short note on (8)
  - a) Cell culture b) organ culture
8. What is in vitro fertilization. Describe types and causes of infertility (8)

X

[2]