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**SUBJECT CODE NO: - YY-2378**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. (CBCGS)(Pattern 2022) F.Y SEM II**  
**Examination April / May - 2024**  
**Zoology Paper-V Genetics**

[Time: 1:30 Hours]

[Max. Marks:40]

Please check whether you have got the right question paper.

N. B

- 1) All questions are compulsory.
- 2) All questions carry equal marks
- 3) Draw diagram wherever necessary

**Q1** What is gene interaction? Explain Hypostatise gene interaction with suitable example. 10

OR

Explain in brief:

- a) Eukaryotic organization of chromosomes
- b) Polytene chromosome

**Q2** Define Mutation? Describe types of gene mutation 10

OR

Explain in brief:

- a) Sickle cell anemia
- b) Brown eyes



**Q3** Write short notes on (any two) 10

1. Multiple genes
2. Telocentric chromosomes
3. Monozygotic twins
4. Dibctes insipidus

**Q4** Select and write correct answer from the given alternative in each sub question. 10

1. If one parent has 'O' blood group and another has 'B' the possible blood group of their children are :
  - a) B
  - b) O
  - c) Both B&O
  - d) All of these
2. Sickle cell anemia is an example of :
  - a) Gene lost
  - b) Chromosomal mutation
  - c) Point mutation
  - d) All of the above

3. Condition for dizygotic twins
- One ovum is fertilized by one sperm
  - One ovum is fertilized by two sperms
  - Two ovum fertilized by one sperm
  - Two ovum fertilized by two sperm.
4. Colour blindness is an example of
- Dominant gene inheritance
  - Sex-linked inheritance
  - X-linked gene inheritance
  - Y-linked gene inheritance
5. Alleles are -----
- Genes
  - Dominant genes
  - Recessive genes
  - Alternate form of genes
6. The true definition of gene frequency is -----
- Relative frequency of an allele at a particular locus
  - Non-relative frequency of an allele at a particular locus
  - Relative frequency of an allele at any locus
  - Non relative frequency of an allele at any locus
7. Gene mutation can occur during
- DNA replication
  - Cell division
  - DNA repairs
  - Fertilization
8. PKU is caused due to deficiency of -----
- Chromosome
  - Gene
  - Enzyme
  - All of these
9. Chromosomes enclosed in a membrane is found in -----
- Virus
  - Bacteria
  - Prokaryotes
  - Eukaryotes
10. Polydactyl is an example of :
- Chromosomal aberration
  - Gene mutation
  - Congenital anomaly
  - None of these