Biyani Girls College

Model test paper A

M.Sc Biotech Previous

Genetics and computer applications

Time allowed: 3hrs **Max Marks=100**

Q1 is compulsory. Attempt any 5 in all.

Q1. (a) Define intron.
(1x20)

(b) State Hardy Weinberg's law.

(c) _____ is the disease caused due to absence of a kind of DNA Excision Repair Mechanism.

(d) Inheritance of blood groups in man is an example of _____ .

(e) _____ & _____ are alkylating agents.

(f) Define tautomerism

(g) Write full form of NICNET and ERNET.

(h) Name two Protein sequence databases.

(i) What is a chi- square test.

(j) Define Correaltion

(k) Expand the terms:

       (I) FASTA   (II)BLAST   (III)ORF   (IV) DDBJ   (V)BTIS

(l) the gene which masks the expression of other genes is called the _____ gene.

(m) _____ is a quantitative trait.

(n) Write 2 characteristics of computers.

(o) Name the kinds of memory in computers.

(p) Name two Operating Systems.

Q2. Give a detailed account of Mutation and its types.
   20

Q3. Write short note on:
(5x4=20)

- Epistasis

- Complementary Genes

- Supplementary Genes

- Extra-nuclear Inheritance

Q4. What is a computer? Explain in detail the types, generations and applications of a computer.
20

Q5. Describe in short: (any2)
(10+10=20)

- RAPD

- Genetic Mapping

- Homologous Recombination

Q6. Write short notes on:
(10+10=20)

- Excision repair

- Structural aberrations

Q7. a) Define median. Write the formula for different grouped data or ungrouped continuous series data

   b) What are standard errors? Write its formula for unordered, ordered or continuous series data.
(10+10=20)

Q8. Write short notes on:
(10+10=20)

   a) Mode

   b) Normal distribution   **20**

Q9. Write in short: (any2)
(10+10=20)

- Internet

- Biological Databases

- System security

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Model test paper B

M.Sc Biotech Previous

Genetics and computer applications

Time allowed: 3hrs   **Max Marks=100**

Q1 is compulsory. Attempt any 5 in all.

Q1. (a) Give one classical example of following gene interaction (with ratios):

   (i) epistasis   (ii) duplicate genes   (iii) complementary gene   (iv) supplementary genes   (v) co-dominance

(b) Define :

   i) Variance   ii) Ames test   iii) Biomed   iv) ISDN   v) Standard deviation

(c) Fill in the blanks :

   (i) _____ and ____ are two kinds of inversion.
           (1x20)

   (ii) Extra-chromosomal inheritance is sometimes called _____.

   (iii) ____ is an example of non-ionising radiations.

   (iv) _____ causes deamination in DNA

(v) _____ is the transfer of chromosomal segment from one character to another.

(d) Give one point of difference between:

    (i) LAN & WAN.

    (ii) Aneuploids and Euploids.

    (iii) F-test & T-test.

    (iv)Assemblers &Compilers

    (v) NER & BER

Q2. Give a detailed account on Gene Interactions.
    20

Q3. Write short note on:
(10+10=20)

        •Mutagen

        •Site-Directed Mutagenesis

Q4. Give a detailed account on DNA repair mecahnisms
    20

Q5. Give a detailed account on Numerical alterations in chromosomes
    20

Q6. Write short notes on:
(10+10=20)

        •Basic components of computer

        •Input devices

        •Output devices

Q7. What do you mean by Correlation? Discuss it with its types & examples
    20

Q8. Write short notes on:
(10+10=20)

        a) Mean

        b)ANOVA-2

Q9. Write in short: (any2)
(10+10=20)

- Alignment tools

- BTIS

- Protein Databases