STD:12 EM BIOLOGY – TEST SERIES Max Mark :25

C3-CHROMSOMAL BASIS OF INHERITANCE

I. CHOOSE THE CORRECT ANSWERS 5 x 1 =5

1 The A and B genes are 10 cM apart on a chromosome. If an AB/ab heterozygote is testcrossed to ab/ab, how many of each progeny class would you expect out of 100 total progeny?

a) 25 AB, 25 ab, 25 Ab, 25 aB b) 10 AB, 10 ab

c) 45 AB, 45 ab d) 45 AB, 45 ab, 5 Ab, 5aB

2 If haploid number in a cell is 18. The double monosomic and trisomic number will be

a) 35 and 37 b) 34 and 35 c) 37 and 35 d) 17 and 19

3 Match list I with list II.

List I	List II
A. A pair of chromosomes extra with diploid	i) monosomy
B. One chromosome extra to the diploid	ii) tetrasomy
C. One chromosome loses from diploid	iii) trisomy
D. Two individual chromosomes lose from diploid	iv) double monosomy

a) A-i, B-iii, C-ii, D-iv b) A-ii, B-iii, C-iv, D-i

c) A-ii, B-iii, C-i, D-iv d) A-iii, B-ii, C-i, D-iv

4 Assertion (A) : Gamma rays are generally use to induce mutation in wheat varieties.

Reason (R) : Because they carry lower energy to non-ionize electrons from atom.

a) A is correct. R is correct explanation of A.

b) A is correct. R is not correct explanation of A.

c) A is correct. R is wrong explanation of A.

d) A and R is wrong.

5 The point mutation sequence for transition, transition, transversion and transversion in DNA are

a) A to T, T to A, C to G and G to C

b) A to G, C to T, C to G and T to A

c) C to G, A to G, T to A and G to A

d) G to C, A to T, T to A and C to G

II VERY SHORT ANSWERS 3 x 2 = 6

6 

From the above figure identify the type of mutation and explain it.

7 Draw the diagram of different types of aneuploidy.

8 What is the difference between missense and nonsense mutation?

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III SHORT ANSWERS 3 x 3 = 9

9 What is gene mapping? Write its uses.

10 Mention the name of man-made cereal. How it is formed?

11 Write the salient features of Sutton and Boveri concept.

IV LONG ANSWERS 1 x 5 = 5

12 When two different genes came from same parent they tend to remain together.

i) What is the name of this phenomenon?

ii) Draw the cross with suitable example.

iii) Write the observed phenotypic ratio.

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