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SARDAR PATEL UNIVERSITY
M. Sc. Integrated Biotechnology – Third Semester Examination
Saturday, 5th May 2018
Time: 10:00 am to 01:00 pm

PS03CIGB06: INTRODUCTION TO GENETICS

Note: (i) Figures to the right indicate marks.

Total Marks – 70

(ii) Draw neat and labeled diagram, wherever necessary.

(iii) "A" part is compulsory from Question 3 to Question 6.

Q-1 Multiple choice questions.

[08]

- (1) Father of Genetics is _____.
 a. Robert Brown b. Robert Hooke c. G. J. Mendel d. Purkinji
- (2) Cross between F1 individual with the parents is called _____.
 a. Monohybrid cross b. Test cross c. Dihybrid cross d. Back cross
- (3) In incomplete dominance, monohybrids phenotypic 3: 1 ratio is modified in to
 a. 2:2 b. 1:2:1 c. 2:1:1 d. 1:1:2
- (4) The gene which stops the expression of another gene is called _____.
 a. Inhibitory b. Supplementary c. Complementary d. None of these
- (5) Mature human ovum contain _____.
 a. One X chromosome b. One Y chromosome
 c. One X and one Y chromosome d. Two X chromosomes
- (6) Genes which are present in the same chromosome and inherit together are called _____.
 a. Linked genes b. Multiple genes c. Pleiotropic genes d. None of these
- (7) Nullisomy is represented by _____.
 a. $2n+2$ b. $2n+1$ c. $2n-1$ d. $2n-2$
- (8) Trisomy at chromosome number 18 leads to _____.
 a. Down's syndrome b. Patau syndrome c. Edward syndrome d. All of these.

Q-2 Answer the following. (Any seven)

[14]

- (1) State monohybrid cross with example.
- (2) Define test cross and its importance.
- (3) Write in brief incomplete dominance.
- (4) What is penetrance?
- (5) What are pseudo-alleles?
- (6) Differentiate homozygous v/s heterozygous and dominant v/s recessive.
- (7) Write the significance of crossing over.
- (8) Write the symptoms of Down's syndrome.
- (9) Write the significance polyploidy.