18BTU07

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch - BIOTECHNOLOGY

GENETICS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** marks (1 0 x 1 = 10)

1 Mendels experimental material was_____
(i) Oryza Sativa (ii) Pisum Sativum
(iii) Mirabilis Jalappa (iv) Arabidopsis thaliana

2 Genotypes ratio of monohybrid cross of Mendel in F2 generation is_____
(i) 3:1 (ii) 1:1
(iii) 1:2:1 (iv) 1:1:1:1

3 The Lowest level of chromosome organization is_____
(i) 30 nm fibre (ii) Nucleosoine
(iii) solenoid (iv)Gene

4 The number of Autocome in human_____
(i) 21 pairs (ii) 44
(iii) 45 (iv) 46

5 Passing at meiosis of homologous chromosome from the similar sets of allopolyploid individual is called_____
(i) Autosyndesis (ii) Allopolyploid
(iii) Hetrosis (iv) Mutation

6 Male sterility is the failure of plants to produce functional_____
(i) Anther (ii) Male gamates
(iii) Pollens (iv) All the above

7 In autosomal recessive disorder, you inherit_____
(i) Two mutated gene, one from each parent
(ii) One mutated gene, from lather
(iii) Two mutated gene, from mother (iv) One mutated gene from mother

8 _____ is a blood disorder that makes blood cells change shape and cause health problem
(i) Thrombosis (ii) Blood Cancer
(iii) Sickle cell anemia (iv) Drug induced anemia

9 The change in the frequency of an existing gene variant in a population due to random sampling of organism is called_____
(i) Deletion (ii) Genetic Shift
(iii) Genetic drift (iv) Mutation

10 _____ consist of all gametes by all the breeding members of a population in a single generation
(i) Genetic drift (ii) Gene pool
(iii) Population genetics (iv) Alleles

SECTION - B (25 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 5 = 25)

11 a Explain Mende's first law.

OR

b Narrate Mechamism of Sex determination.

12 a Describe Down Syndrome in detail.

OR

b Outline Centromeric breaks in chromosome.

13 a Describe cytoplasmic inheritance.

OR

b Narrate polyploidy in plants.

14 a State Y linked inheritance.

OR

b Describe mitochondrial disorder with an example.

15 a How does gene flow occurs in population genetics.

OR

b Describe inbreeding with example.

SECTION -C (40 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 8 = 40)

16 a Classify the types of dominance & Discuss about it.

OR

b Crossing over serves as the basis for determining the distance between genes during mapping - Justify.

17 a Elucidate the structure of chromosome with a neat sketch

OR

b Discuss Cri-du-chat syndrome.

18 a Highlight the role of Oraganellar genes.

OR

b Discuss cytoplasmic male sterility with neat sketch.

19 a Summarize multifunctional inheritance with an example.

OR

b Categorize the diagnostic methods of chromosome abnormalities.

20 a Elucidate the principle of Hardy- Weinberg law.

OR

b Highlight genetic variation in Natural population.

Z-Z-Z END