

B.Sc. Semester III (Honours) Examination, 2018-19**BOTANY****Course ID : 31313****Course Code : SHBOT-303C-7(T)**

Course Title: Genetics

Time: 1 Hour 15 Minutes**Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions from the following: 1×5=5
- (a) 'Linked gene does not follow mendelian inheritance'.—Why?
 - (b) Distinguish between double monosomy and nullisomy.
 - (c) How interference differs from coincidence?
 - (d) What is the function of transposase.
 - (e) State the 'Hardy-Weinberg' principle.
 - (f) What is sex linked trait?
 - (g) Distinguish monocistronic and polycistronic gene.
 - (h) What do you mean by genetic drift?
2. Answer *any two* questions from the following: 5×2=10
- (a) What is codominance? With suitable example, explain dominant epistasis type of gene interaction. 1+4=5
 - (b) What is extra chromosomal inheritance? Explain it with the help of a suitable example. 1+4=5
 - (c) How does UV-ray differ from a base analogue as mutagen? Briefly explain the mechanism of DNA repair by photoreactivation. 2+3=5
 - (d) Explain complete linkage and incomplete linkage with suitable examples.
3. Answer *any one* from the following questions: 10×1=10
- (a) What is translocation heterozygote? Explain the meiotic behaviour of translocation heterozygote with suitable sketches and their consequences. 2+6+2=10
 - (b) Distinguish the basic mechanism of action of ionising and non-ionising radiation in mutation. Describe how intercalating and alkylating agent induce mutation with suitable sketches. 2+4+4=10
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