

B.Sc. 3rd Semester (Honours) Examination, 2019-20

MICROBIOLOGY

Course ID : 32213

Course Code : SH/MCB-303-C-7

Course Title: Molecular Biology

Time: 1 Hour 15 Minutes

Full Marks: 25

*The figures in the right hand side margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* of the following: 1×5=5
- (a) What is T_m ?
 - (b) State the function of DNA polymerase I.
 - (c) What are split genes?
 - (d) Name the enzyme involved in charging of tRNA.
 - (e) What is role of 23s r-RNA in translation?
 - (f) Write the significance of CAP in lactose operon.
 - (g) What is the function of histone deacetylase (HDAC)?
 - (h) Define alternative splicing.
2. Answer *any two* of the following: 5×2=10
- (a) Write a short note on DNA methylation. What is the significance of capping? 4+1=5
 - (b) Discuss in brief θ mode of DNA replication. What is the function of reverse DNA gyrase? 4+1=5
 - (c) Differentiate between Denaturation and Renaturation of nucleic acid. Add a short note on mitochondrial DNA. 2+3=5
 - (d) Describe the structure of B-DNA proposed by Watson & Crick. Distinguish it from z-DNA. 4+1=5
3. Answer *any one* from the following: 10×1=10
- (a) Describe the transcription process found in prokaryotic cell with neat sketch. What is consensus and conserve sequence? 7+3=10
 - (b) Discuss in detail about structure and regulation of tryptophan operon. Add a note on RNA interference. 2+4+4=10
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