

**Avinashilingam Institute for Home Science and Higher Education for Women  
Coimbatore-641 043**

**Bachelor's Degree Examination – November 2017**

**V Semester**

**Class : III UG  
Major : Botany**

**Time : 3 hours  
Max. Marks: 100**

**15BBOC14 Molecular biology**

**Part-A**

**10 x 1=10**

**Choose the correct answer**

1. The most stable compound in a cell is  
a. Ribosome  
b. RNA  
c. DNA  
d. Chromosome
2. Phosphoric acid esters of nucleosides are called as  
a. Nucleotides  
b. Nucleolus  
c. Pyrimidine  
d. Purine
3. Synthesis of new DNA strand is catalyzed by – \_\_\_\_\_  
a. Zymase  
b. Protease  
c. DNA polymerase  
d. Ligase
4. Short fragments of lagging strand are called as  
a. Pentose sugar  
b. Okazaki strands  
c. Templates  
d. Nitrogen bases
5. RNA is formed from DNA by a process called  
a. Transpiration  
b. Transcription  
c. Translation  
d. Transition
6. Regulatory RNA's are also called as  
a. Micro RNA  
b. Macro RNA  
c. Sub unit RNA  
d. NOTA
7. First codon of a messenger RNA transcript translated by a ribosome is  
a. Catalyst  
b. End codon  
c. start codon  
d. Primer
8. Set of genes transcribed under the control of an operator gene are called as  
a. Template  
b. Codon  
c. Triplet codon  
d. Operon
9. Light dependent enzyme involved in photo reactivation is  
a. DNA Photolyase  
b. Telophase  
c. Interphase  
d. Prophase
10. Which one of the following is a bypass system of emergency DNA repair mechanism  
a. Translesion synthesis  
b. SOS  
c. Mismatch  
d. Excision

**Part B**

**5 X 6=30**

**Answer the following**

**Answer should not exceed 400 words or two pages**

- 11.a. Write a brief account on the functions of DNA.  
(Or)
- 11.b. Write an account on the physical properties of DNA.
- 12.a. Explain in brief about the role of restriction endonucleases.  
(Or)
- 12.b. Explain the function of ligases.
- 13.a. Write about the functions of RNA.  
(Or)
- 13.b. Write short notes on mRNA.
- 14.a. Explain initiation and elongation of Translation.  
(Or)
- 14.b. Define termination of Translation.
- 15.a. Write about mismatch repair mechanism.  
(Or)
- 15.b. Explain about SOS in brief.

**Part - C**

**5 x 12=60**

**Answer the following**

**Answer should not exceed 800 words or four pages**

- 16.a. Explain Watson and Cricks model of DNA in detail.  
(Or)
16. b. Write an essay on Nuclear and Mitochondrial DNA.
- 17.a. Write an account on the semi-conservative replication in E.coli.  
(Or)
17. b. Explain the role of polymerase enzyme in DNA replication.
- 18.a. Give a detailed account on r RNA.  
(Or)
- 18.b. Write about t RNA in detail.
19. a. Describe Lac operon concept.  
(Or)
19. b. Explain about the steps involved in Transcription.
- 20.a. Give an account on Photo reactivation in detail.  
(Or)
- 20.b. Write an essay on DNA damage.

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