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B.A. RNLK-/C12T/21

2021

Physiology (H)

[Fifth Semester]

Paper - C12T

Full Marks : 40

Time : 2 hours

*The figures in the right-hand margin indicate marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

1. **Answer any five question :** **5×2=10**
  - a) State the functions of primase. 2
  - b) What is ligase? State its function. 1+1=2
  - c) What is Codon? Give an example of stop Codon. 1+1=2
  - d) What is mutation? Give an example of chemical mutagenic agent. 2

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- e) What are oncogens? 2
- f) What is Karyotyping? 2
- g) State the principle of genetherapy. 2
- h) What are Okazaki fragments? 2

**2. Answer any four questions. 4×5=20**

- a) What is semiconservative mode of DNA replication?  
Briefly describe Meselson & Stahl experiment in support of semiconservative mode of DNA replication.  
2+3=5
- b) What is replication? Briefly describe the replication process with diagram. 2+3=5
- c) What is wobble hypothesis? State major characteristics of the genetic code. 2+3=5
- d) Differentiate between euchromatin & heterochromatin. State the functions of DNA Polymerase. 2+3=5
- e) What is apoptosis? State the properties of cancer cells. 2+3=5

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- f) Define transcription? Briefly describe the eukaryotic transcription process. 2+3=5

**3. Answer any one question.**

- a) What is RDT? What are restriction enzymes? State with example. What are the major applications of recombinant DNA technology. 2+3+5=10
- b) What is an operon? Briefly describe the lac operon gene regulation system. 2+8=10