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**6 SEM TDC BOT M 3**

**2 0 1 7**

( May )

**BOTANY**

( Major )

Course : 603

**( Molecular Biology and Immunology )**

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

1. (a) Express in one word : 1×3=3

(i) DNA segment in between two exons  
which is not translatable

(ii) Unit of function in gene

(iii) Ability of an organism to resist  
diseases

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( Turn Over )

( 2 )

(b) Fill in the blanks :  $1 \times 2 = 2$

(i) Coding strand of DNA is called \_\_\_\_ strand.

(ii) The gene coding for a protein is known as \_\_\_\_ gene.

(c) Write short notes on the following :  $3 \times 3 = 9$

(i) Forms of DNA

(ii) Codon dictionary

(iii) Inflammation in body

2. What is promoter? Describe, with diagrams, the molecular mechanism of transcription in prokaryotes.  $2+9=11$

Or

Put forward your concept on gene regulation and illustrate the process of regulation of gene expression in prokaryotes with the help of lac operon model.  $3+8=11$

3. What do you mean by IPHM? Describe briefly the interaction of plants with bacteria, virus and fungi.  $2+3+3+3=11$

Or

Define acquired immunity and explain the mechanism of antigen-antibody interactions in hosts.  $2+9=11$

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( Continued )

( 3 )

4. Write explanatory notes on any *three* of the following :  $4 \times 3 = 12$

(a) Transformation in bacteria

(b) Codon and anticodon

(c) TATA box

(d) Flor's hypothesis

(e) R-genes in plants

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