6 SEM TDC BOT M 3

2015

(May)

BOTANY

(Major)

Course : 603

(Molecular Biology and Immunology)

Full Marks : 48
Pass Marks : 19

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Give one word for the following : 1×3=3

(i) Transcription of DNA to RNA to protein

(ii) The set rules by which information encoded in genetic material (DNA or RNA sequences) is translated into proteins (amino acid sequences) by living cells

(iii) Gamma globulin proteins that are found in blood or other bodily fluids of vertebrates, and are used by the immune system to identify and neutralize foreign objects, such as bacteria and viruses

(b) Fill in the gaps : 1+1=2

(i) —— is defined as complete haploid genetic complement of a typical cell.

(ii) —— are groups of genes coding for related proteins arranged in units.

(c) Write short notes on the following : 3×3=9

(i) Plasmid

(ii) Transcription Unit

(iii) Western Blot

2. Define protein bio-synthesis. Describe the mechanism of protein biosynthesis in prokaryotes with diagram. 1+10=11

Or

Define genetic recombination in bacteria. Describe the mechanisms of genetic recombination in bacteria with diagram. 1+10=11

3. What are innate immunity and acquired immunity? Explain giving suitable examples. (2+2)+7=11

Or

What do you mean by breeding for disease resistance? Explain briefly various mechanisms of disease resistance. 4+7=11

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

   (a) Codon and anticodon

   (b) Structure and function of Z-DNA

   (c) Shine-Dalgarno sequence

   (d) Antigen and antibody

   (e) Environment and immunity

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