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4 SEM TDC BIOTCH G 1

2015

(May)

BIOTECHNOLOGY

(General)

Course : 401

(Microbiology and Immunology)

Full Marks : 48

Pass Marks : 19

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Choose the correct answer : 1×4=4

(a) Which of the following secretes antibodies?

(i) B-lymphocytes

(ii) T-lymphocytes

(iii) Plasma cells

(iv) NK-cells

(b) The antigen binding site of an antibody depicts

(i) idiotype

(ii) isotype

(iii) allotype

(iv) anti-idiotype

(c) All strains of *Lactobacillus* produces large amount of

(i) acetic acid

(ii) lactic acid

(iii) pyruvic acid

(iv) mycolic acid

(d) The microorganism which aquire energy from the oxidation of chemical compounds are called

(i) phototrophs

(ii) chemotrophs

(iii) autotrophs

(iv) mixotrophs

2. Write briefly about the following : 4+3+3

(a) Nitrification

(b) Gram staining

(c) B-lymphocytes and T-lymphocytes

3. What is monoclonal antibody? Explain the hybridoma technology for the production of monoclonal antibody. 4+7

Or

Define antigen, epitope and antibody. Describe the molecular structure of IgG. Also explain how many fragments are generated when IgG is treated with papain, a mild proteolytic enzyme. 3+6+2

4. What is fermentation? Mention the types of fermentation and organism involve in the type of fermentation. Also explain the physiological importance of fermentation. 4+4+3

Or

Explain at least two methods of gene transfer in microorganisms with suitable illustrations. 11

5. Write short notes on any *two* of the following : 6×2=12

(a) Kinds of flagella

(b) Humoral immunity

(c) Symbiosis and antibiosis in microbial population

(d) Food microbiology

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