T.Y. Bsc (Biotechnology)

RAIGAD - VI (2010 Course) : SUMMER - 2016

Sem - VI

Subject : Industrial Biotechnology

Day : Tuesday
Date : 12/04/2016

28477

Time : 10.00 AM TO 01.00 PM
Max Marks : 80 Total Pages : 1

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Both the sections written in **SEPARATE** answer sheet.

SECTION-I

Q.1 A) Answer **Any ONE** of the following: **(06)**

a) Discuss different types of microbial products in brief.
b) Explain different nitrogen sources used in fermentation media.

B) Answer **Any TWO** of the following: **(10)**

a) Give an account on gluconic acid production.
b) What is secondary screening? Give its significance.
c) Give an account on media sterilization.

Q.2 Answer **Any FOUR** of the following: **(16)**

a) What are criteria of selection of industrially important microorganism?
b) What is inoculum media? Give its significance.
c) Write short notes on production of fungal amylase.
d) Discuss inoculum development with refer to bacteria.
e) Explain the role of chelator and precursor in fermentation media.

SECTION-II

Q.3 A) Answer **Any ONE** of the following: **(06)**

a) What is process monitoring? Explain in brief with reference to measurement and control of foam.
b) Discuss ideal characters of fermenter.

B) Answer **Any TWO** of the following: **(10)**

a) Draw well labeled diagram of a typical fermenter indicating its various parts.
b) Discuss microbial production of penicillin in brief.
c) What is an effluent management? Give features of an anaerobic treatment plant.

Q.4 Answer **Any FOUR** of the following: **(16)**

a) Sensors used in fermenter
b) Basket centrifuge
c) Production of ascorbic acid
d) Latex collection for papain production
e) Monitoring of microbial count during fermentation

Q.5 Answer **ALL EIGHT** of the following: **(16)**

a) Enlist various methods of enzyme immobilization.
b) Define down stream processing.
c) What do you mean by scale up?
d) What are different types of carotenoids?
e) Enlist different methods of assessing papain activity.
f) Name various carbon sources in fermentation media.
g) Enlist various antifoam agents.
h) Name microorganism used in fermentation of ethanol and streptomycin.

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RAIGAD - VI (2010 Course) : SUMMER - 2016

Subject : Applied Biotechnology

Day : Saturday
Date : 16/04/2016

28478

Time : 10.00 AM TO 01.00 PM
Max Marks : 80 Total Pages : 1

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q.1 Answer **ANY FOUR** of the following: **[16]**

a) Discuss in brief the role of proteolytic enzymes in fish processing.
b) Which enzymes play an important role in fruit juice extraction? Describe any two enzymes.
c) Discuss various uses of grape seed oil.
d) Explain the role of nutritional enzymes in health.
e) Discuss the biotic and abiotic factors that damage bamboo.

Q.2 Write short notes on **ANY FOUR** of the following: **[16]**

a) Application of proteases in meat tenderization
b) Enzymes in de-haring of hide
c) Enzymes in silver recovery
d) Gluten and its significance in bakery industry
e) Enzyme of importance in dairy industry

SECTION – II

Q.3 Give reasons for: **[16]**

a) Development of haze in beer.
b) Peanut meal can be a value added product.
c) Immobilized enzymes are preferred over soluble enzymes.
d) Enzyme arginase is important in bakery industry.

Q.4 Answer **ANY FOUR** of the following: **[16]**

a) What are biological detergents? Explain in brief.
b) Describe briefly the methods used for preserving bamboo.
c) Discuss how chitin is a preferred support for enzyme immobilization.
d) What are pancreatic enzymes? Discuss their role for health.
e) Discuss the various operations of leather processing in brief.

Q.5 Answer the following in **ONE** or **TWO** sentences: **[16]**

a) Shelf life of bakery products can be enhanced using enzymes. Name them.
b) How does Bromelin act?
c) What are builders? What is their role in detergents?
d) Name the various materials that are used as support for immobilization of enzymes.
e) What are artificial sweetners? Where are they used?
f) How is honey adultered? How can the adultration be detected?
g) How can banana waste be utilized effectively?
h) Enlist the important component of yeast lees.

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Subject : Clinical Biotechnology

Day : Monday
Date : 18/04/2016

28479

Time : 10.00 AM TO 01.00 PM
Max Marks : 80 Total Pages : 2

N.B.:

1) All questions are **COMPULSORY**.
2) All questions carry **EQUAL** marks.
3) Write both sections on **SEPARATE** answer sheets.
4) Draw well labeled diagrams and structures **WHEREVER** are necessary.

SECTION – I

Q.1 **a)** Attempt any **ONE** of the following: **(06)**

i) Explain the significance of Hemogram. State the significance of packed RBCs and platelets.

ii) Define 'Anemia'. Explain different types of anemia.

b) Attempt any **TWO** of the following: **(10)**

i) Explain the steps involved in blood coagulation and clotting factors.

ii) State and explain the role of SGOT and SGPT in clinical diagnosis.

iii) Describe the constituents of urine and their significance in diagnosis.

Q.2 Write short notes on any **FOUR** of the following. **(16)**

a) Matching and cross matching of blood groups

b) Pathophysiology and types of Diabetes.

c) Significance of enzyme levels in as diagnostic tools in heart disorders

d) Types of cholesterol

e) Role of ADH in water balance

SECTION – II

Q.3 **a)** Attempt any **ONE** of the following: **(06)**

i) What is haematopoiesis? Name and state the functions of various blood cells formed in haematopoietic stem cell.

ii) With the help of a diagram describe the basic structure of IgG molecule.

b) Attempt any **TWO** of the following: **(10)**

i) Describe the process of phagocytosis.

ii) What are cytokines? Describe briefly the properties of cytokines.

iii) Explain the structure and various classes and subclasses of antibodies.

P.T.O.

Q.4 Write short notes on any **FOUR** of the following: **(16)**

a) Radial Immunodiffusion
b) Western Blot
c) Monoclonal antibodies as diagnostic agent
d) β – cells
e) Anatomical and chemical barriers of innate immunity

Q.5 Attempt any **EIGHT** of the following: **(16)**

a) Expand the terms APC and MHC.

b) Name the primary lymphoid organs.

c) State the role of natural killer cells.

d) What are haptens?

e) What are granzymes and perforins?

f) State the functions of eosinophills and basophills.

g) Define – allotypes, isotypes and idiotypes.

h) Name the different types of ELISA.

i) Give names of the sub-sets of T cells.

j) What are the different types of antigens?

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