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SARDAR PATEL UNIVERSITY
(A-76) M. Sc. THIRD SEMESTER EXAMINATION
Date: 18-04-2015

PS03CBIT01: MICROBIAL BIOTECHNOLOGY

TIME: 2.30 TO 5.30 P.M.

MAX.MARKS: 70

Q-1 Select most appropriate answer from the given choices. (08)

- 1 Xanthan is made up of sugar/s.
a) Glucose b) Mannose c) Glucuronic acid d) All of the above
- 2 Calf rennet is a/an
a) Milk protein b) Lipase c) Alkaline protease d) Acid protease
- 3 Which of the following compound contain cobalt ion?
a) Corriphyrin b) Cobyritic acid c) Urogen III d) Coprogen III
- 4 Which of these is a compulsory ingredient for Brewing?
a) Hops b) Barley c) Yeast d) All
- 5 Which of the following is not a precursor for penicillin biosynthesis?
a) Cysteine b) Valine c) α -Aminoadipic acid d) Aspartate
- 6 β Amylase action on wheat starch produce
a) Maltose and limit dextrins b) Dextrins only c) Maltose d) Glucose
7. A microbial flavor - Methyl ketone is synthesized from.....
a) Citric acid b) Fatty acid c) Amino acid d) None of the above
- 8 Which of the following organisms get energy by only fermentation?
a) *Lactobacillus bulgaricus* b) *E. coli* c) *Bacillus subtilis* d) All

Q-2 Answer any seven short questions. (14)

- a) What is the function of riboflavin?
- b) Explain the importance of PHA synthesis.
- c) What is wheat gluten?
- d) Name the sterols used for synthesis of steroid drugs and write their sources.
- e) Explain the term: Biological value of protein.
- f) Write the uses of acetic acid.
- g) Explain the therapeutic value of ergot alkaloids.
- h) Explain the effect of salting in cheese making.
- i) Neatly narrate the structure of Penicillin.

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Q-3A Describe the fermentative production of vitamin B12. (06)

Q-3B Explain the use of auxotrophic mutants in L Lysine production (06)

OR

Explain the biosynthesis of ergot alkaloids. (06)

Q-4A Explain recovery of citric acid from fermentation broth and write its uses. (06)

Q-4B Write in detail on recovery of penicillin. (06)

OR

Explain the applications of proteases and amylases in food processing. (06)

Q-5A Write on therapeutic use of steroids and describe any one microbial transformation of steroid in detail. (06)

Q-5B Write a note on cultivation of edible mushrooms. (06)

OR

Explain the desirable criteria for single cell protein and describe production of algal biomass. (06)

Q-6A Describe the downstream processing in microbial exopolysaccharide production. (06)

Q-6B Neatly narrate flow diagram for yoghurt making and explain the mechanism of coagulation of milk during yoghurt making. (06)

OR

Discuss the role of starter cultures used in yoghurt and cheese making. (06)