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DATE: **17-04-2018**

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**B.Sc. BIOTECHNOLOGY – VI SEMESTER**

**SPECIAL SUPPLEMENTARY EXAMINATION: APRIL 2018**

**BT 6112- Animal and Industrial Biotechnology**

Time -3hrs Max Marks-100

This Paper contains two printed pages and four parts

(For supplementary candidates)

Do not write the register number on the question paper

Please attach the question paper along with the answer script.

1. **Choose the right answer 1x10=10**

1. Which group of parameters are very important for starting fermentation in a bioreactor.

 a.Water, C source, N source, O2, Nutrients

 b.Alcohol, C source, N source, CO2, Nutrients

 c Water, C source, N source, CO2, Nutrients

 d. Alcohol, C source, N source, O2, nutrients

2. Find the odd one out.

 a. Aerobic bioreactors need stirring b. Aerobic bioreactors need spargers

 c. Anaerobic bioreactors need mixing d. Anaerobic bioreactors do not need spargers.

3. The lower the volume of the media in a shaker flask, the better will be the

 a. Media transfer rate b. Oxygen transfer rate

 c. Microbial transfer rate d. Fermentation rate

4. Steroid transformation by fungal strains has the following advantage during industrial

 production

a.Grows in complex medium b. Easy recovery of product

c.Cost is high d. Spores will be present

5. Which fungal source is used to obtain cellulose

 a. Aspergillus b. Penicillium c. Rhizopus d. Trichoderma

 6. Rapid cooling process in ice cream industry involves

a.Deep freezers and CaCl2 solutions b.Deep freezers and liquid nitrogen.

c.Only deep freezers d.Only CaCl2 chambers

7. Embryonic stem cells are harvested from the ……….………………..of Mouse blastocysts

a. Outer cell mass b. Inner cell mass c. Pronuclei d . Cells in the cavity

8. Creating a pseudopregnant mouse involves

a. mating a female mouse with a vasectomized male

b. mating a female mouse with a normal male

c. mating a pregnant female mouse with a normal male

d. mating a pregnant female mouse with a vasectomized male

9. The vector largely used in animal transgenic construct is

a. pBR322 b. SV40 c. YAC d. CaMV

10. Comparing the composition of Earle’s balanced salt solutions to Hank’s balanced salt

 solution, EBSS does not contain

a.CaCl2 b.KCl c.KH2PO4 d.NaCl

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**II. Answer any FIFTEEN of the following 2x15=30**

1. State any four animal enzymes.
2. Define a clone.
3. What is cryopreservation?
4. Explain pharmacokinetics.
5. Define transformed cells.
6. What are primary cultures?
7. Define PHA.
8. What are the materials used for beer production?
9. Which strains can be used to produce alcohol from sugars?
10. State any two strains used to obtain amylase enzymes.
11. How is temperature maintained in a bioreactor.
12. Explain Gene disruption.
13. What are scorable markers? Give an example.
14. What are clinical trials?
15. State the uses of coagula in animal cell media.
16. What are table wines?
17. What are clean rooms?
18. Define immobilization.

**III. Answer any FIVE of the following 6x5=30**

1. Explain the production of single cell proteins.
2. What are draft tubes? Explain its types.
3. Draw a neat labeled diagram of a bioreactor.
4. Explain the extraction and purification of enzymes.
5. What are the requirements of an Animal cell culture laboratory?
6. Explain the development of transgenic mouse.
7. Justify the uses of animals in clinical trails.

**IV. Answer any THREE of the following 10x3=30**

1. Detail the steps involved in production of cheese.
2. Discuss how clones are developed? State the problems developed in clones.
3. Explain the media used for animal cell culture.
4. How would you develop an industrially important strain?
5. Explain the factors affecting fermentation.

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