GAF-454 Seat No._____

B. Sc. (Sem. V) Examination

November/December – 2015

Paper - CC-I-7 : Biotechnology

(Bioprocess & Biochemical Engineering)

Time : 3 Hours] [Total Marks : 70

1(A) MCQ and very short questions **(15)**

1. Primary screening is
   A. Isolation of large number of microbes out of sauce.
   B. Isolation of small number of potential microbes.
   C. Isolation of large number of potential microbes.
   D. Exclusion of very small number of potential microbes.
2. Which one of the following is considered as a method of strain improvement?
   A.Mutagenesis B. Recombination
   C. r DNA technology D. All of the above.
3. A researcher wants to preserve his culture in liquid nitrogen than what should be ideal temperature?
   A. -98 C^0 B. -190 C^0 C. -196 C^0 D. -120 C^0
4. DMSO can be used as a ----------
   A. Sterilization B. Incubation
   C. Cryoprotactant. D. All of the above.
5. A culture which is maintained with constant conditions by addition of nutrients and removal of waste is called ----------system.
   A. Continuous B. Fed batch
   C Batch D. Semi continuous.

6. Which type of media is sugar cane molasis?

A. Defend B. Undefined.
C. Synthetic. D. All of the above.

7. ---------- is used for production of penecilin
A. *penicillium notatum*
B. penicillium chrysogenum
C. *Aspergilus niger*
D. B and C both.

8. _____is considered perfect method of sterilization?

A. Autoclaving. B. Hot water bath

C. Pasteurization. D. All of the above.

9. Starter culture used for fermentation should be
A. Metabolically active
B. Metabolically inactive
C. Metabolically less active.
D. Independent of its metabolic status.

10 Downstream processing depends upon----------
A. Localization of product.
B. Temperature sensitivity.
C. Solvent sensitivity.
D. All of the above.

11. Full form of OTR is----------

12. Full of DNA is----------

13 Give one example of anti foaming agent.

14. Full from of DMSO_____

15. Define antibiotic.

2 Give the answer the question in short (Any five) **(15)**

1. Explain turbidostat.
2. Give advantages of continuous culture techniques.
3. How to prepare starter culture?
4. What is spontaneous mutation?
5. Give media composition for ethanol fermentation.
6. Recovery of penicillin antibiotic.
7. Nitrogen source in fermentation media.

3 Write a short note on any four of the following. **(20)**

1. Explain fermenter design.
2. Discuss fermentation economics.
3. Give short note on biochemical pathway of penicillin biosynthesis.
4. Explain carbon source used in fermentation media.
5. Strain improvement by rDNA technology.
6. Explain secondary screening.

4 Write detailed note on any two of the followings. **(20)**

1. Alcohol fermentation.
2. Overview of downstream processing.
3. Bioreactors.
4. Sterilization processes associated with fermentation process.