

**Birla Institute of Technology & Science – Pilani, Hyderabad Campus**

**First Semester 2022-2023**

**Quiz 2 (Open book)**

**Bioprocess Technology, BIO F451**

**Date: 10.12.2022**

**Duration: 30 minutes**

**Total Marks: 30 M**

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**Answer ALL the questions in the given sequence ONLY.**

1. To form cheese, a mixture of bacteria and fungi act upon
  - a) Fermented milk sugar
  - b) Lactic acid
  - c) Fats
  - d) All of the above
2. Pasteurization of the raw material is done in the wine making process by
  - a) Heat treatment
  - b) Addition of metabisulfite
  - c) Ultrasonication
  - d) Filtration
3. Which of the operation does not come under upstream processing
  - a) Media preparation
  - b) Inoculum development
  - c) Effluent treatment
  - d) Storage of raw material
4. Fusel oil contains
  - a) Amyl alcohol
  - b) Isoamyl alcohol
  - c) n-propyl alcohol
  - d) All of the above
5. Example of an enzyme used as medicine
  - a) Creatine kinase
  - b) Streptokinase
  - c) Glucose oxidase
  - d) All of the above
6. Example of distilled alcohol is
  - a) Beer
  - b) Wine
  - c) Whiskey
  - d) Cider
7. Penicillin production in the fermentation broth takes place in the
  - a) Lag phase
  - b) Log phase
  - c) Stationary phase
  - d) Death phase
8. Following enzyme(s) is/are required for the saccharification of starch
  - a) Protease
  - b) Cellulase
  - c) Alpha amylase
  - d) Lipase
9. How many grams of ethanol are obtained from 180 grams of glucose?
  - a) 92
  - b) 90
  - c) 180
  - d) 46

10. The following raw material is mostly used in the wine making industry
- a) Pineapple juice
  - b) Apple juice
  - c) Grapes juice
  - d) None of the above
11. Glutamic acid is used for the following purposes
- a) As nutritional supplement
  - b) As flavour enhancer
  - c) In the cosmetic industry
  - d) All of the above
12. In the alcohol production process, rigorous pretreatment is necessary for the following raw materials
- a) Sucrose
  - b) Starch
  - c) Lignocellulosic biomass
  - d) None of the above
13. Malt beverage is produced from
- a) Barley grains
  - b) Wheat grains
  - c) Soybean
  - d) Rice
14. The example of a bottom fermenting yeast is
- a) *Saccharomyces carlsbergensis*
  - b) *S. cerevisiae*
  - c) *S. ellipsoideus*
  - d) None of the above
15. The following chemicals are present in hops
- a) Tannins
  - b) Resins
  - c) Essential oils
  - d) All of the above
16. Which of the fermentation type produces the highest amount of ethanol?
- a) Batch
  - b) Batch with yeast recycle
  - c) Continuous
  - d) Continuous (immobilized yeast)
17. Which one of the following is the correctly matched pair of a product and the microorganism responsible for it?
- a) Ethyl alcohol – yeast
  - b) Acetic acid – Lactobacillus
  - c) Cheese – Nitrobacter
  - d) Curd – Azotobacter
18. Which of the following organic acids were produced by fermentation?
- a) Oxalic acid
  - b) Lactic acid
  - c) Aspartic acid
  - d) Propionic acid

19. Which of the following is a human fibroblast derived skin substitute?

- a) TransCyte™  
c) Cytoskin™
- b) Carticel™  
d) Skinocel™

20. Intellectual Property Rights (IPR) is a process which protects the use of information and ideas that are of

- a) Ethical value                      b) Commercial value  
c) Social value                        d) Moral value

21. Which of the following can be patented?

- a) Machine  
b) Process  
c) Composition of matter  
d) All of the above

22. Which biofuel has the highest motor octane number?

- a) Unleaded gasoline                      b) Methanol  
c) Ethanol                                    d) Butanol

23. Which of the following is NOT used to produce ethanol?

- a) Corn starch  
c) Cane sugar
- b) Oil crops  
d) Beet molasses

24. What medicine is produced using fermentation?

- a) Paracetamol  
c) Morphine
- b) Penicillin  
d) Cough syrup

25. Which of the following is true for Ale beer?

- a) Top fermenting yeast is used                      b) Fermentation finishes by 5-7 days  
c) Quantity of hops used is more than Lager      d) All of the above

26. The process of making malt as soluble as possible by using enzymes, adjuncts, etc. is known as

- a) Brewing  
c) Mashing
- b) Malting  
d) Pitching

27. Lagers are the beer in which fermentation is carried out using

- a) Top fermenting yeast      b) Bottom fermenting yeast  
c) Either of these      d) Middle fermenting yeast

28. Sake is

- a) Rice beer or wine of India
- b) Wheat beer or wine
- c) Barley beer or wine
- d) Rice beer or wine of Japan

29. Wort is

- a) An aqueous extract of malt
- b) Malted barley
- c) Coagulated protein obtained in boiling
- d) None of the above

30. Which of the following microorganism is used for the production of citric acid?

- a) *Lactobacillus bulgaricus*
- b) *Saccharomyces cerevisiae*
- c) *Aspergillus niger*
- d) *Streptococcus lactis*

\*\*\*\*\*BEST OF LUCK\*\*\*\*\*