

2020

**MICROBIOLOGY — HONOURS — PRACTICAL**

**Paper : CC-12P**

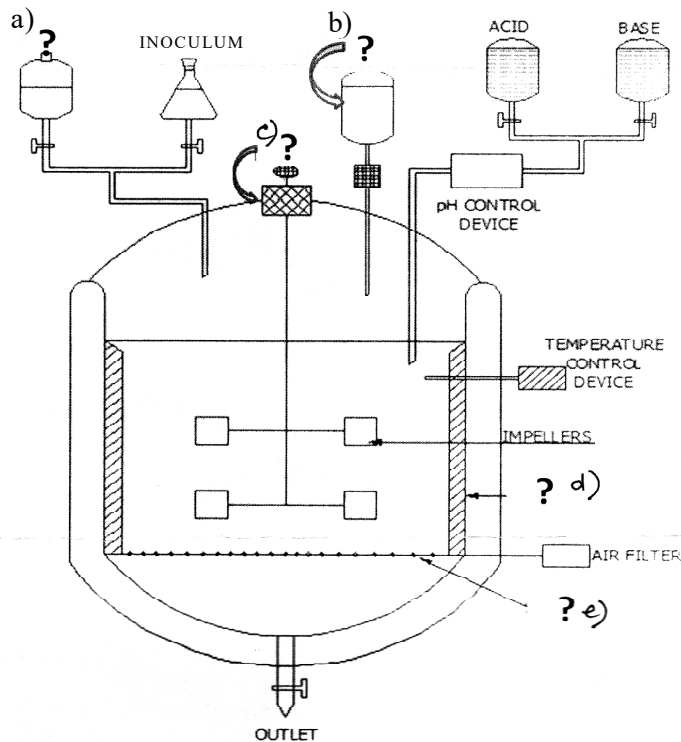
**Full Marks : 30**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Answer all questions.*

1. Identify the parts of the fermenter that have been marked in the provided image and mention their main function in the fermentation process. 1×5



2. In an experimental set up for ethanol production, 10 ml of 10% sugar containing media is inoculated with pure culture of *S. cerevisiae* along with a Durham's tube, for 48-72 hrs. under aerobic condition. Post incubation, gas formation is observed in Durham's tube but identification test for ethanol gives very poor result.
- (a) Explain the observation.
- (b) What changes can you make to improve production of ethanol? 2½×2

**Please Turn Over**

3. (a) Using the given data set, draw a standard curve for tyrosine.

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| $\mu\text{mol}$ of Tyrosine | O.D. <sub>660</sub> |
|-----------------------------|---------------------|
| 1                           | 0.22                |
| 2                           | 0.4                 |
| 3                           | 0.58                |
| 4                           | 0.84                |
| 5                           | 1.1                 |

(b) Using the standard curve of tyrosine, calculate the protease activity for an unknown sample, in units/ml, where,

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$$\text{O.D}_{660} = 0.65$$

Volume of enzyme added = 0.2 ml

Reaction time = 10 mins

Total reaction volume = 10 ml

Volume used for colorimetric determination = 2 ml

4. LNB + Viva.

10

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