Total No. of Questions : 5] **SEAT No. :**

P614 **[Total No. of Pages : 2**

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F.Y. B.Sc.

INDUSTRIAL MICROBIOLOGY (Vocational)

Micro Organism and Systems for Fermentation Processes

(2013 Pattern) (Paper-I) (Theory)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***All questions carry equal marks.***
4) ***Draw neat labelled diagrams wherever necessary.***
5) ***Scientific calculators is allowed.***

Q1) Answer each sub-question in one or two lines; fill in the blanks: **[16]**

a) Limiting Reagent.

b) Accuracy.

c) What is process flow diagram?

d) Patent types.

e) Aspect ratio.

f) What is GILSP?

g) Baume scale uses _____ instrument to measure concentration of solute in solution.

h) What is ensured by quality assurance process?

Q2) Attempt any four of the following: **[16]**

a) Discuss different meanings of word fermentation?

b) Explain the process of Isolation of Industrially important micro organism from environment.

c) Sketch the cyclic process of model construction, verification & application.

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d) How least square analysis applied in finding goodness of fit of data?

e) List five names of micro organisms and fermentation product produced by them.

f) Describe the firmicutes important in industrial microbiology.

Q3) Write short note on any four of the following: **[16]**

a) Components of modelling.

b) Error types.

c) Classification of physical variables.

d) Stoichiometery.

e) Up stream process.

f) Culture collections.

Q4) Attempt any two of the following: **[16]**

a) Describe the measurement of temperature and pressure quality.

b) Explain the process of development of pharmaceutical product.

c) Enlist and explain the characteristics important in microbes used in industrial microbiology.

d) Following are the 10 measurement carried out on saccharomyces cerevisae cell diameter calculate and represent mean, standard deviation & variance.

Diameter in micrometer:3.32, 3.6, 3.49, 3.25, 3.33, 3.38, 3.27, 3.1, 3.45, & 3.29.

Q5) Attempt any one of the following: **[16]**

a) Describe the linear and non-linear models of data anylysis.

b) Discuss the WHO's classification of micro- organisms on the basis of hazards and containment level followed.