KA-474 Seat No. _____

Third Year B. Sc. (Sem. V) Examination

October / November - 2017

CC-I-7 : Biotechnology : Paper - VII

(Bioprocess & Biochemical Engineering)

Time : 3 Hours] [Total Marks : 70

1 MCQS : (all questions are compulsory) 15

(1) Biosynthetic pathway is shutdown because of...

(a) Over production of end product

(b) feedback inhibition

(c) Feedback repressor.

(d) All of above

(2) A better yield of product is controlled by..

(a) Culture condition

(b) Optimum medium

(c) Genome of organism

(d) All of the above

(3) A culture system with constant environment maintain through continuous provision of nutrient and removal of broth is called...

(a) Batch system

(b) Fed batch

(c) Continuous system

(d) Semi-continuous system

(4) In Plackett burman design, there are at least _____ dummy variable.

(a) 3 (b) 2

(c) 1 (d) 4

(5) In growth curve, storage phase is equivalent to

(a) lag phase

(b) late exponential phase

(c) stationary phase

(d) middle log phase

(6) Which of the following is incorrect ?

(a) sachharomyces ceravesiae : baker's yeast.

(b) Penicillium chrysogenum : Penicillin.

(c) Aspergillus niger : Citric acid

(d) Streptomyces griseus : Gluconic acid

(7) Applications of fermentation includes

(a) cereal products (b) beverage products

(c) dairy products (d) All of above

(8) Chelating agents prevent formation of insoluble

(a) Calcium precipitates

(b) Metal precipitates

(c) Enzyme precipitates

(d) Product precipitates

(9) Antifoam agent is

(a) Silicon compounds

(b) Corn oil

(c) Soyabean oil

(d) All of these

(10) Specific growth rate can be determined by

(a) $dx/dt = \mu x$

(b) $\mu = \mu \max - s/ks+s$

(c) $x = y\left(SR - S\right)$

(d) $xt = xoe^{\mu t}$

(11) Application of alcohol.

(12) Draw a penicillin structure

(13) Define preservation.

(14) Define inoculums development programme.

(15) Give full form of MTCC.

2 Give a short note on any five of the following : 25

(1) Aeration and agitation device

(2) R-DNA technology for the improvement of secondary metabolite.

(3) Lyophilization.

(4) Variable volume fed batch culture kinetics.

(5) Application of secondary screening.

(6) Chemostat and Turbidostat.

(7) Flow chart of downstream processing.

3 Give a detailed note on any three of the following : 30

(1) Batch culture kinetics

(2) Airlift and deep jet fermentor

(3) Medium optimization

(4) Fermentation of penicillin

(5) Improvement of primary metabolites by selecting induce mutant.
