AAH-003-001612 Seat No. _____

B. Sc. (Sem. VI) (CBCS) Examination

April/May – 2016

Botany : Paper - B - 602

(Plant Phy., Biochem, Biosta., Microbio. & Biodiversity)

(New Course)

Faculty Code : 003

Subject Code : 001612

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) Write answer all questions in main answer book.

(2) Draw neat and labelled diagrams wherever necessary.

(3) Figures to the right side indicate full marks for the question.

1 Choose the correct answer. **20**

(1) Phytochrome is used in

(A) Seed germination only

(B) Transpiration only

(C) Flowering only

(D) All physiological process exhibited by the plants such as seed germination, flowering stem elongation and transpiration

(2) Seeds of some plants do not germinate even under favourable conditions due to

(A) Dormancy (B) Quiescence

(C) Vivipary (D) Non-viability

(3) Photo periodism influences

(A) Seed germination (B) vegetative growth

(C) Internode elogation (D) All the above

(4) Vernalisation occurs in response to

(A) High light intensity (B) Low temperature

(C) High temperature (D) Low light intensity

(5) Odd one out

(A) Starch (B) Glycogen

(C) Chitin (D) Agar-Agar

(6) Albumins are the example of

(A) Conjugated protein (B) Derived protein

(C) Simple protein (D) None of these

(7) Glutamine synthetase is a

(A) Ligase (B) Transferase

(C) Oxido reductase (D) Isomerase

(8) Alkaloids in plants are

(A) Reserve materials (B) Excretory materials

(C) Secretary materials (D None of these

(9) The geometric mean of two numbers 8 and 2 is

(A) 4 (B) 16

(C) 5 (D) None of these

(10) The ratio of difference between two means and standard error of diffference between two means is called

(A) Chi-Square test

(B) Standard deviation

(C) Student's 't' test

(D) Coefficient of concardance

(11) Find the mode : 18, 21, 23, 23, 25, 25, 25, 27, 29, 29.

(A) 23 (B) 29

(C) 21 (D) 25

(12) What is χ^2 (chisquare) ?

(A) $\sum\left(\frac{O-E}{E}\right)^2$ (B) $\sum\frac{d^2}{N}$

(C) $\frac{d^2}{N}$ (D) $\frac{\sum X}{N}$

(13) The most common chelating agent in culture media is

(A) EDTA (B) Citric acid

(C) Glycerol (D) Sterols

(14) Yeasts help in the production of

(A) Acetic acid (B) Curd

(C) Ethyl alcohol (D) Glucose

(15) In microbial sterilization pressure cooker is a substitute for

(A) Flaming
(B) Hot air oven
(C) Auto clave
(D) All of these

(16) Curd, cheese and butter are produced with the use of

(A) Yeast
(B) Streptococcus
(C) Penicillium
(D) None of these

(17) Diversity of habitats over the total geographical area is

(A) Alpha diversity
(B) Beta diversity
(C) Gamma diversity
(D) Delta diversity

(18) Which one of the following is not used for ex-situ plant conservation ?

(A) Shifting cultivation
(B) Seed banks
(C) Botanical garden
(D) Field gene bank

(19) What is most effective way to conserve plant diversity of an area ?

(A) Tissue culture
(B) Botanical garden
(C) Biosphere reserves
(D) Seed banks

(20) State the relation between productivity and diversity of species.

(A) Productivity is directly proportional to species diversity
(B) Productivity is inversely to species diversity
(C) There is no relation between productivity and species diversity
(D) Productivity does not play any role in diversification of species

2 (a) Answer in short - (Any three) **06**

(1) Explain : Practical applications of vernalisation.

(2) Write notes on properties of lipids.

(3) Define - Chi-square test.

(4) Write any two applications of microbes in food procesing.

(5) What is bio-diversity ?

(6) Describe the structure of the heads of T_4 phages.

(b) Answer in brief (Any three) : **09**

(1) Explain : Factors affecting on growth of plants.

(2) Describe the properties of Alkaloids.

(3) Calculate the arithmetic mean of energy requirement of five fishes.

Sr. No.	1	2	3	4	5
Energy requirement of fish (X)	12	15	18	13	12

(4) Explain : The concept of pure culture.

(5) 'India is great hotspot of bio diversity' - Justify.

(6) Describe - merits and mode.

(c) Answer in detail (Any two) : **10**

(1) Explain : Causes for seed dormancy.

(2) Write an essay on competitive inhibition of enzyme.

(3) In a random sampling, the length of ten fishes is given below. The mean length of population is 7 cm. Calculate whether the mean difference between the sample and the population is significant or not.

Length of fishes in cm. 6, 4, 6, 8, 7, 5, 6, 4, 9, 5

(4) Describe the ultra structure of E.coli.

(5) Explain : The conservation strategies of bio diversity.

3 (a) Answer in short (Any three) : **06**

(1) What is growth kinetics ?

(2) Explain : Biological functions of oil.

(3) Calculate the standard deviation of following data

11, 13, 15, 17, 19

(4) Write notes on batch culture.

(5) What is ex-situ conservation ?

(6) Describe : Advantages of seed dormancy.

(b) Answer in brief (Any three) **09**

(1) Explain : Phytocrome.

(2) Give the properties of monosaccharides.

(3) Calculate the median of fruit yield of mango tress :

No.of Mangoes / tree	50	60	70	80	90
No.of trees(f)	7	6	3	4	2

(4) Explain : Gram staining method.

(5) Discuss : Biodiversity for human welfare.

(6) Write notes on : Semi solid media.

(c) Answer in detail (Any two) **10**

(1) Describe : Classification of plants based on photo periodism.

(2) What is protein ? Discuss the Biological functions of protein.

(3) A coin is to seed zootimes. Head comes 120 times and tail 80 times. Verify by χ^2 test whether the coin is unbiased.

(4) Explain : methods of sterilization in microbiology.

(5) Discuss : The three levels in biodiversity.