MAN-003-001612   Seat No. _____

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

March / April - 2018

Botany : Paper - 602

(Plant Physiology, Biochemistry, Biostatistic,
Microbiology & Biodiversity)

(New Course)

Faculty Code : 003

**Subject Code : 001612**

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

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

(2) Draw neat and labeled diagrams wherever necessary.

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

1 Write the correct answer of the following questions in **20** one or two sentence. (Each questions is one mark)

(1) Which regions of our country are known for their rich biodiversity ?

(2) The red absorbing form of phytochrome gets converted to the far-red absorbing form after getting irradiated at _____ nm.

(3) Which substance used in the tissue culture medium for induction of shoots in callus is _____.

(4) Write the name of monosaccharides found in nucleic acids.

(5) Write the name of three important components of biodiversity.

(6) What is meant by simple lipid ?

(7) Which plant hormone responsible for the dormancy of seeds ?

(8) What is a holoenzyme ?

(9) Given below is the diagram of a bacteriophage. Write the correct name of A, B, C and D ?
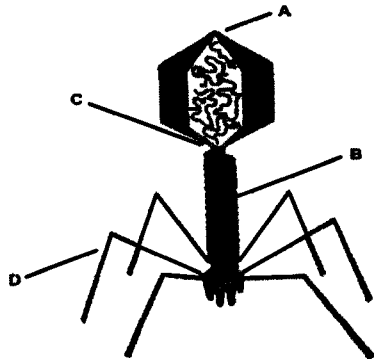
(10) Phytochrome occurs in two forms. In which form it promotes the germination of seeds of some species

(11) What is the name of simplest amino acid ?

(12) Ethanol is commercially produced through a particular fungal _____ species.

(13) How much land should be under forests in a country ?

(14) Calculate the STDV of the following data :
9.9,12,7.5,6.7,12.4,10.2,4.9,11.8,9.1

(15) Biodiversity Act of India was passed by the parliament in the _____ year.

(16) Write the name of microorganism is used for production of citric acid in industries.

(17) If the STDV and Mean are 2.8 and 42.3, find the coefficient of variance.

(18) Write the name of two conjugated proteins.

(19) Find out the median of following data :
56, 82, 42, 68, 74, 54, 44

(20) What is the correct equation of CHI-SQURE TEST ?

2 (a) Give the Answer in short : (Any **Three**) 6
    (1) Write short note : Differential media.
    (2) Write short note : Pasteurization.
    (3) List main objectives of the conservation of wild life. (Four point)
    (4) Discuss Gram staining
    (5) Write the application "t" test.
    (6) Write two major differences between saturated and unsaturated fatty acids. (Four point)

(b) Give the Answer in brief : (Any **Three**)   9

(1) Find the median and median class of the data given below :

Class boundaries	15 – 25	25 – 35	35 – 45	45 – 55	55 – 65	65 – 75
Frequency	4	11	19	14	0	2

(2) Define with example : Null hypothesis and alternative hypothesis

(3) Describe type of Phytochrome.

(4) Explain : Processes of seed germination

(5) Write short note : classification of Carbohydrates.

(6) Write the six function of Protein.

(c) Describe in detail : (Any **Two**)   10

(1) Calculate S.D. for the following distribution.

Height in inches	95 – 105	105 – 115	115 – 125	125 – 135	135 – 145
No. of children	19	23	36	70	52

(2) Describe the factors effecting on growth of plants.

(3) Explain what is meant by species diversity.

(4) What are cofactors and coenzymes ? Give examples.

(5) Explain briefly the concept of biosphere reserves.

3   (a) Give the Answer in short : (Any **Three**)   6

(1) Find out the mean of following numbers :
12.5, 13.7, 15.9, 20.4, 25.2, 11.8, 10, 22.1, 18.3

(2) Give the classification of enzyme.

(3) Describe : Advantage of seed dormancy.

(4) Describe : Flowering hormone (Florigen).

(5) Write the disadvantage of mean (Any four)

(6) Distinguish between a national park and a wild life sanctuary.

(b) Give the Answer : (Any **Three**)   9

(1) Describe primary and tertiary structure of protein.

(2) Name any one homopolysaccharide. Give its chemical structure.

(3) What is a oligomeric protein ? Give example.

(4) Write short note : Solid and semi solid media.

(5) Explain : importance of sterilization method.

(6) Application of fertilizers were tested for the yield of rice grow in 10 plots. Another seed of 10 plots of similar size and condition were taken as control Test the effect fertilizers :

Plot No.:	1	2	3	4	5	6	7	8	9	10
Fertilizer applied	16	14	18	15	13	17	16	15	14	13
Fertilizer not applied	10	12	11	9	13	13	12	14	13	11

Null Hypothesis: No significant effect of fertilizer on yield of rice grown. Alternative Hypothesis : Significant effect of fertilizer in yield of rice grown.

(1) Level of significances : 5% level i.e. 0.05.

(2) Critical value : Tabulated value at 0.05 for of $10 + 10 - 2 = 18$ is 2.10

Give the following answer.

(1) The null hypothesis rejected or accepted ? Write the decision of fertilizers on rice plant growth.

(c) Give the Answer in brief : (Any **Two**)   10

(1) Explain detail : Anaerobic fermentations

(2) Four of the self fertilised F_1 plants that Mendel observed for segregating of yellow and green seeds colour showed the following results among their seeds.

Plants	1	2	3	4
Yellow Seeds	25	32	14	70
Given Seeds	11	7	5	27

Test the homogeneity of the four plants for the 3 : 1 ratio, and determine whether the data can be summed to calculate chi-square. And write Decision.

(*Critical Value* : The control value at 0.05 for 3 df is 7.82.)

(3) Write ten General properties of Alkaloids

(4) Briefly give the role of microbes in the production of curd.

(5) What is pure culture ? Describe various techniques of pure culture.