TDP (General) 1st Semester Exam., 2018

BOTANY

(General)

FIRST PAPER

Full Marks : 40

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Characterize bacteria. What is phylogenetic system of classification? Give an outline of phylogenetic system of classification up to division. Mention its merits. 2+2+4+2=10

Or

(b) Define species. On the basis of theory of natural selection, explain the origin of new species. Differentiate between allopatric and sympatric speciations. What is alternation of generation? 2+4+2+2=10

2. *(a)* What is PAN? What do you mean by biodegradable and non-biodegradable pollutants? Name the major air pollutants. What are the major effects of air pollution on plants and human beings? 1+2+3+2+2=10

Or

(b) What do you mean by heavy metal pollution? What are the effects of noise pollution on living organisms? What are the sources of pollutants in case of soil pollution? What are the causes of 'Minamata' and 'itai-itai' diseases? 2+3+3+1+1=10

3. *(a)* What is 'nucleus seed'? Write the full form of ICAR. Mention the types of organic fertilizers. Write a brief note on the different steps for certified seed production. 2+1+2+5=10

Or

(b) Which microorganisms are used for the commercial production of citric acid? Why is lime used in the production of citric acid? How 95% ethyl alcohol is converted into 100% ethyl alcohol? Write a short note on the method of cultivation of *Spirulina*. 1+2+2+5=10

4. *(a)* What is plant nursery? What are the different types of plant nursery? Mention the quality of a good selection site for establishing a plant nursery. Name some important floricultural crops of India. 1+3+3+3=10

(Continued)

Or

(b) What is pulsing solution? Differentiate between cutting and layering. Add a note on the various types of natural vegetative propagation with suitable example. 2+3+5=10

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TDP (General) 3rd Semester Exam., 2018

BOTANY

(General)

THIRD PAPER

Full Marks : 40

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. Answer any *two* of the following questions : 10×2=20

(a) What is coenocytic mycelium? Describe the process of sexual reproduction in Mucor. Write the ecological role of lichens. Name the major component of fungal cell wall. 2+5+2+1=10

(b) Write the scientific names, family, parts used and uses of the following plants : (1+½+½+½)×4=10

(i) Papaver

(ii) Linseed

(iii) Radish

(iv) Coffee

(c) Write the plant part used and the uses of Jute and Cumin and mention their scientific names. What do you mean by retting of jute? What type of soil and climate is required for jute cultivation?
(½+½+1)×2+2+(2+2)=10

2. Answer any *two* of the following questions :
10×2=20

(a) What is capsid? Describe the structure of a T_4 bacteriophage. Distinguish between lytic and lysogenic cycles. What is viroid? 1+5+2+2=10

(b) Define transformation and conjugation. What is Hfr strain? Describe the structure of cell wall in gram-negative bacteria. What is mesosome?
(1+1)+2+4+2=10

(c) What is virion? Draw a lysogenic cycle of a lambda (λ) bacteriophage. Write the symptoms of 'black stem rust of wheat' disease. What are the chemical methods to control 'late blight of potato' disease?
1+3+3+3=10

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TDP (General) 4th Semester Exam., 2018

BOTANY

(General)

FOURTH PAPER (Group–A)

Full Marks : 40

Time : 2 hours

The figures in the margin indicate full marks for the questions

Answer **four** questions, taking **two** from each Unit

UNIT—I

1. What do you mean by cohesion of stamens? Briefly describe different types of cohesion of stamens with example. Define aggregate fruit. Describe legume. 1+(4+2)+1+2=10

2. What is labellum? Write the diagnostic characters of the family Asteraceae. Mention the position of ovary and number of stamens in the family Rubiaceae. Why is Magnoliaceae regarded as primitive family among dicotyledons? 1+5+(½+½)+3=10

3. With suitable sketches, describe different types of aestivation. Write the economic importance of the family Brassicaceae and Solanaceae. 2+4+2+2=10

UNIT—II

4. Differentiate between meristematic and permanent tissue. Add a note on extra-stelar secondary growth in dicotyledonous stem. What is interfascicular cambiam? Write the functions of apical meristem. 3+4+1½+1½=10

5. Define endemism. Briefly explain the theories of endemism. Briefly describe the flora of Tripura State. 1+4+5=10

6. Write short notes on the following : 2×5=10

(a) Bicollateral vascular bundle

(b) Amphiphloic siphonostele

(c) Red Data Book

(d) Various stages of xerosere

(e) Names of phytogeographical regions of India (D. Chatterjee–1960)

★★★

Reempi Das.

S–5/BOTG/05/18

TDP (General) 5th Semester Exam., 2018

BOTANY

(General)

FIFTH PAPER

Full Marks : 40

Time : 2 hours

The figures in the margin indicate full marks for the questions

1. Answer any *two* of the following questions : 10×2=20

(a) Which phase of cell cycle is known as synthetic phase? Briefly describe the structure of chloroplast with labelled sketches. Describe the morphological types of chromosome according to the position of centromere with figure. 1+3+2+4=10

(b) What is the difference between nucleoside and nucleotide? What do you mean by transcription? Briefly describe the steps of translation in prokaryotes. What is lac operon? 1+2+5+2=10

(c) Describe incomplete dominance with suitable example. What do you mean by acclimatization? Discuss the methods of emasculation process adopted during hybridization. Differentiate between mass selection and pure line selection. 3+1+4+2=10

2. Answer any *two* of the following questions : 10×2=20

(a) What is photorespiration? Mention the sites of photorespiration. With schematic diagram, describe the process of photorespiration. What are antitranspirants? 2+1+5+2=10

(b) What is leg haemoglobin? Write a brief note on role of nitrogenase in N_2-fixation. Describe the physiological role of auxin in apical dominance and cell elongation. What is NAA? 2+3+(2+2)+1=10

(c) What is explant? Name some complex organic additives. Briefly discuss the steps involved in haploid culture. What is totipotency? 1+2+5+2=10

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