U.G. 3rd Semester Examination - 2021

BOTANY

[HONOURS]

Skill Enhancement Course (SEC)

Course Code : BOT-H-SEC-T-01A&B

Full Marks : 40 Time : 2 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer all the questions from Selected Option.

OPTION - A

BOT-H-SEC-T-01A

[Biofertilizers]

1. Answer any **five** of the following: 2×5=10

   a) What is an inoculum?

   b) What is organic farming?

   c) Why congo red is used in YEMA medium?

   d) What are obligate symbionts?

   e) Mention two species of AM fungi.

   f) What is cfu in microbiology?

   g) Why is surface-sterilization of explants done before they are used to establish axenic or *in vitro* culture?

   h) Mention the classification of *Azotobacter*.

2. Answer any **two** of the following: 5×2=10

   a) Write a brief note on vermicompost.

   b) Elucidate the role of *Azolla* in rice cultivation.

   c) Differentiate between chemical fertilizers and biofertilizers.

   d) Describe the isolation technique of *Rhizobium* from root nodules.

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

   a) Name the species of *Azospirillum*. Describe briefly how *Azospirillum* is isolated from soil and its mass multiplication process. 2+4+4=10

   b) What are AM fungi? How are they isolated from soil? Elucidate the inoculum production of AM fungi. 2+4+4=10

   c) What are wastes? How are biodegradable wastes different from non-biodegradable wastes? Discuss the recycling of biodegradable wastes. 2+3+5=10

   d) Write notes on the following: 5+5=10

      i) Phosphorus nutrition of mycorrhizal plants.

      ii) Actinorhizal plants.

OPTION - B

BOT-H-SEC-T-01B

[Plant Diversity and Human Welfare]

1. Answer any **five** of the following: 2×5=10

   a) Define cultivated plant taxa and wild plant taxa.

   b) What is agrobiodiversity?

   c) Define Red Data Book.

   d) What is the full form of NBPGR? Mention its function in conservation of plant resources.

   e) Define genetic diversity.

   f) Name any two National Parks in India.

   g) Write down the scientific name of two alcoholic beverage yielding plants.

   h) Mention two uses of wood.

2. Answer any **two** of the followings: 5×2=10

   a) Define ecosystem. Briefly describe the plant diversity at ecosystem level. 1+4

   b) Mention the role of IUCN and UNESCO. $2\frac{1}{2}+2\frac{1}{2}$

   c) Describe in brief the major reasons behind the loss of biodiversity. 5

   d) Mention the importance of forestry in commercial aspects. 5

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

   a) What are *in situ* and *ex situ* conservation? Briefly describe two i*n situ* and two *ex situ* conservation facilities. 2+4+4

   b) Mention the scientific names and families of four timber yielding, four fruit crops and two ornamental plants. $(\frac{1}{2}+\frac{1}{2})\times4+(\frac{1}{2}+\frac{1}{2})\times4+(\frac{1}{2}+\frac{1}{2})\times2$

   c) Discuss in brief about sustainable development. Mention some of the uses of microbial diversity in human welfare. 6+4

   d) Briefly discuss the ethical and aesthetic values of biodiversity. Mention some of the uses of plants in biodiversity. 3+3+4

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