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12 BIOLOGY BOTANY AND BOTANY PUBLIC EXAM IMPORTANT QUESTIONS**K.BALASUBRAMANIAN PGT IN BOTANY GHSS SIRUVANTHADU VILLUPURAM DT 605105****CHAPTER-1 ASEXUAL AND SEXUAL REPRODUCTION IN PLANTS****2 AND 3 MARKS**

1. What is asexual reproduction? Give example
2. What are the types of vegetative reproduction? Give an example
3. What is carrot grass? Give an example
4. Differentiate Grafting and layering?
5. What is Terror of Bengal?
6. What is micropropagation?
7. What are the functions of tapetum?
8. What is ephiphyllous buds?
9. What are the uses of Bee pollen?
10. Draw the diagram of embryo sac .Give the parts
11. Write short notes on mechanism of pollination in *Adansonia digitata*.
12. Write short notes on pollen kit
13. What is Cantharophily?
14. What is Mellitophily?
15. What is meant by reproductive propagules or diasporos?
16. What is cap block?
17. Write short notes on Ruminant endosperm . Give an example
18. What is obligate mutualism/ give an example for insect interaction
19. Write short notes on aleurone tissue.
20. What are the functions of endosperm?
21. What is meant by parthenocarpy? What are the types, Give an example.
22. Write the significance of pollination?
23. Write the significance of Parthenocarpy?
24. How pollination mechanism of Hypohydrophilly take place in *Zostera marina* ?

5marks

1. Explain the structure of an ovule.
2. What is endosperm? Explain the types of Endosperm.
3. Explain the mature anther wall. Draw the anther lobe and label the wall layers.

CHAPTER 2 CLASSICAL GENETICS

1. What are the reasons for Mendel's successes in his breeding experiments?
2. Why Mendel selected garden pea plant for his hybridisation experiments?
3. Compare Discontinuous variation and Continuous variation.
4. Define law of segregation/ law of purity of gametes / why gametes are never hybrid.?
5. What is back cross?
6. Define Law of independent assortment.
7. What is gene interactions?
8. Define Atavism. Give an example
9. What is test cross?

- 10 What is empirical approach and empirical law?
- 11 Define heterosis/ hybrid vigour.
- 12 Bring out inheritance of chloroplast gene with an Example

5 MARKS

- 1 Explain about dihybrid cross.
- 2 What is incomplete dominance? Explain with example.
- 3 Explain polygenic inheritance? With an example.

CHAPTER -3 CHROMOSOMAL BASIS OF INHERITANCE

- 1 What are the salient features of the Chromosomal theory of inheritance?
- 2 What is fossil Genes?
- 3 What is Coupling or Cis configuration?
- 4 What is Repulsion or trans -configuration?
- 5 Define complete linkage . give an example.
- 6 Define incomplete linkage. Give an example.
- 7 Differentiate between linkage and crossing over.
- 8 What is genetic mapping? What are the uses of genetic mapping?
- 9 Does environmental play a role on sex determination in plants?
- 10 In multiple alleles within the population, but individuals have only two of those alleles. Why?
- 11 Define frameshift mutation.
- 12 Write short notes on colchicines.
- 13 How do plants protect themselves from exposure of sunlight throughout the day ?
- 14 What is indel mutations?
- 15 What are Okazaki fragments?
- 16 Define significance of crossing over.
- 17 What is translation?
- 18 Define introns .
- 19 Define exons.
- 20 What is the significance of Ploidy?
- 21 What is splicisomes?
- 22 What are the significance of RNA editing?
- 23 What is DNA repair?
- 24 What is replication fork?
- 25 What is alternate splicing?
- 26 What is meant by capping and tailing?
- 27 What are the significance of Transposons?
- 28 What is hn RNA?
- 29 What are the advantage of a three point test cross?
- 30 What are termination sequences?

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5 MARKS

Sn	Gametes types	Number of progenies
1	ABC	349
2	Abc	114
3	abC	124
4	AbC	5
5	aBc	4
6	Abc	116
7	ABc	128
8	abc	360

i, What is the name of this test cross?

li How will you construct gene mapping from the above given data?

lii Find out the correct order of genes.

2, Mention the name man-made cereal. How it is formed

3, Explain the sex determination in papaya

4, Explain sex determination in maize.

5, Explain holyday recombination

6, Explain significance of ploidy.

CHAPTER-4 PRINCIPLES AND PROCESS OF BIOTECHNOLOGY**2 AND 3 MARKS**

1, What is SCP?

2, pBR 322? Explain?

3, What is walking genes?

4, Write any two desirable gene to host plant without vector?

5, Compare the Southern blotting, Northern blotting, Western blotting.

6 Define Bioremediation.

7 What is phytoremediation?

8 What is RNA interference?

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- 9 Explain the method of hydrogen production by algae.
- 10 Draw the blotting apparatus and labelled its parts.
- 11 What are the advantage of herbicide tolerant crops?
- 12 How will you identify a vectors?
- 13 What is biopiracy?
- 14 What are the advantage and disadvantage of bt cotton?
- 15 Define biopharming. Give its uses.

5 MARKS

- 1 Explain r DNA Recombinant Technology .
- 2 Explain biofermentor/ bioreactor Write about the process of fermentation.
- 3 What is the purpose of green fluorescent protein?
- 4 Explain neem, turmeric and basmathi rice ingredients

CHAPTER-5 PLANT TISSUE CULTURE

- 1 What is totipotency?
- 2 What is agar?
- 3 What is the role of GEAC?
- 4 What are the types of culture medium used in tissue culture?
- 5 What is hardening?
- 6 What is callus?
- 7 What is cybrid?
- 8 What are embryoids?
- 9 What are secondary metabolites produced by plants?
- 10 What is somatic embryogenesis?
- 11 Give examples of two secondary metabolites produced by plants.
- 12 Define Intellectual property Right (IPR)

13 How are synthetic seeds/artificial seeds produced?

14 What are Ethical issues in Genomic Research?

5 MARKS

1, Explain the application of plant tissue culture.

2, Explain the technique of plant issue culture.

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CHAPTER-6 PRINCIPLE OF ECOLOGY

1. Define ecology.
2. What are the steps involved in ecological hierarchy?
3. Differentiate habitat and niche
4. What is ecological equivalents give an examples
5. What is ecological factors?
6. What is sclerophyllous forests?
7. Define albedo effect.
8. What is fire? What are the types of fires?
9. What are edge effect? Give an example.
10. What are the proto cooperation give an example
11. Write short notes on kairomone
12. What are the types of hydrophytes based on their relation to water and air?
13. Define Hygrophytes. Give an example
14. Write short notes on trichophyllous plants. Give an example
15. What is phylloclade? Give an example
16. What is cladode? Give an example
17. What is phyllode? Give an example.
18. Write short notes on tropophytes.
19. List out three mangrove forest present in tamilnadu.
20. Define seed ball.

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- 21 List out important ecological day
- 22 What is phytoremediation?
- 23 What is mutualism?
- 24 What is vivipary?
- 25 What is co evolution?
- 26 What are the effects of fire?
- 27 What are advantage of seed dispersal?
- 28 What is soil profile?
- 29 Write short notes on rhytidome/
- 30 What is edge effect?
- 31 What is thermal stratification?
- 32 What is junglone?

5 marks

- 1 Explain soil profile with characters of different soil horizons.
- 2 Tabulate the different interactions seen in plants
- 3 Explain drought adaptation

CHAPTER 7 ECOSYSTEM

1. What is ecosystem?
- 2 What are the types of carbon?
- 3 Productivity of profundal zone will be low. why?
- 4 Define productivity.
- 5 What is food chain?
- 6 State the ten percent law.
- 7 What is food web?
- 8 What is the significance of food web?

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- 9 What is blue carbon ecosystem?
- 10 What is plant succession?
- 11 What is ecological pyramids?
- 12 What are the types of eltonian pyramids?
- 13 Define humification.
- 14 What is flagship species?
- 15 Define leaching/ Eluviation.
- 16 What is ecesis?
- 17 Pyramid of energy is always upright. Give reasons.
- 18 How do anthropogenic activities affect ecosystem services?
- 19 Draw a pyramid from following details and explain in brief . quantities of organisms are given- Hawk-50, plants-1000, rabbit and mouse- 250+250, pythons and lizard- 100+50 respectively
- 20 Give various stages of Plant hydrosere succession
- 21 What is catabolism?
- 22 What are the two types basic biogeochemical cycle?
- 23 List out the types of ecosystem services .
- 24 Write short notes on ecosystem resilience.
- 25 What are the strategy of ecosystem management?
- 26 What are the types of succession?

5 marks

- 1 Compare primary and secondary succession
- 2 Explain the types of ecosystem.
- 3 Explain the significance of plant succession
- 4 Explain the process of succession

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CHAPTER-8 ENVIRONMENTAL ISSUES

- 1 What is green house effect?
- 2 What is global warming?
- 3 What is ozone hole?
- 4 What is plant indicators? give an example
- 5 What is meant by Deforestation?
- 6 What is biochar?
- 7 What is bio magnification?
- 8 What is invasive species?
- 9 Write short notes on Bio monitoring.
- 10 How to classify redlist data book based on IUCN?
- 11 What is the impact of Eicchornia on water bodies ?
- 12 Write the main features of chipko movement?
- 13 What are the strategies to deal with global warming?
- 14 What is Dobson units?
- 15 What are the effects of ozone depletion/
- 16 What are the benefits for agroforestry/
- 17 What is carbon capture and storage.{ CCS}?
- 18 What is carbon sequestration?
- 19 What is carbon sink?
- 20 What are the benifits of EIA to society?
- 21 What is Remote sensing?
- 22 How to assessed the impacts of biodiversity?
- 23 Mention the four satellites that launched in year and its applications
- 24 What are the main lakes in tamilnadu? Give its importance

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25 How do forest helps in maintaining the climate?

5 MARKS

- 1 Explain Global warming effects on plants?
- 2 Explain the environmental benefits of rainwater harvesting ?
- 3 Explain carbon foot print?
- 4 Explain the advantage of rainwater harvesting?

CHAPTER-9 PLANT BREEDING

- 1 What is acclimatization?
- 2 Define green insitu manuring/ green leaf manuring
- 3 What is biofertilizers?
- 4 Listout the classification of biofertilizers with an example
- 5 What is bio-pesticides?
- 6 Trichoderma species a free living fungi as recognised as bio- control agent .why?
- 7 What are the objectives of plant breeding?
- 8 Define pureline selection?
- 9 What is heterosis/ hybrid vigor?
- 10 Write short notes on NBPGR?
- 11 What is hybridisation?
- 12 Write short notes on Gamma garden/ atomic garden?
- 13 Tabulate plant breeding for developing resistance to diseases.
- 14 What is the role of Nel jayaraman strive hard for conservation of traditional rice varieties
- 15 What is biofortification?
- 16 List out pest resistant varieties in plants
- 17 What are the benefits of seed hardening?
- 18 How to classify of seeds based on storage?

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- 19 What is seed certification?
- 20 List out the new breeding technique involved in developing new traits in plant breeding?
- 21 What is the significance of neem at storage of seed?
- 22 What is bio priming of seeds ?

5 marks

- 1 Explain the objectives of plant breeding.
- 2 Explain the steps of hybridisation
- 3 Explain the use of seaweed as fertilizers
- 4 Explain polyploidy breeding

CHAPTER-10 ECONOMICALLY USEFUL PLANTS AND ENTREPRENEURIAL BOTANY

- 1 What is the significance of food plants?
- 2 Write short notes on IRRI.
- 3 Why do popcorn pops?
- 4 Differentiate major millets and minor millets.
- 5 What is pseudo-cereal? Give an example
- 6 What is Stevia/ Sweet leaf?
- 7 List out benefits of coffee.
- 8 What is lemon grass?
- 9 Which is called king of perfumes/ black gold of india. Write its uses.
- 10 How to classify fibres based on their uses
- 11 What is vulcanisation?
- 12 Write short notes on Champaran satyagraha
- 13 Why Madurai malli has distinct reputation universally why?
- 14 Write short notes on rayon?
- 15 Capsaicin is responsible for pungency. Why?
- 16 What are the three humors in panchabuta?
- 17 Name the three ayurveda scientist in compendium based on humor principle?

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- 18 Which is called king of bitters . and its uses.
- 19 What is psychoactive drugs?
- 20 Define bonsai.
- 21 Write short notes on NMPB(National medicine plants board)
- 22 What is terrarium?
- 23 What will you want to make a portable indoor greenery?
- 24 Mention the medicinal uses of curcuma longa(turmeric)

5 marks

- 1 Explain the medicinal uses of medicinal plants
- 2 Explain the steps involved in Mushroom cultivation?
- 3 Explain the advantage of cultivation of aromatic plants?

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