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# JKPSC Exam

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1(CCE-M)6

BOTANY - I

[04]

Time Allowed -3 Hours

Maximum Marks-300

### INSTRUCTIONS

- i) Answers must be written in English.
- ii) The number of marks carried by each question is indicated at the end of the question.
- iii) The answer to each question or part there of should begin on a fresh page.
- iv) Your answer should be precise and coherent.
- v) The part/parts of the same question must be answered together and should not be interposed between answers to other questions.
- vi) Candidates should attempt **Five** questions .Question nos.1and 5 are compulsory and remaining **Three** questions selecting atleast **One** from each section.
- vii) If you encounter any typographical error, please read it as it appears in text book.
- viii) Candidates are in their own interest are advised to go through the General Instructions on the back side of the title page of the Answer Script for strict adherence.
- ix) No Continuation sheets shall be provided to any candidate under any circumstances.
- x) Candidate shall put cross (X) on blank pages of answer Script.
- xi) No blank page be left in between answer to various questions.
- xii) No programmable Calculator is allowed.
- xiii) No stencil (with different markings) is allowed.
- xiv) In no circumstances help of scribe will be allowed.

**Candidates should attempt Five questions.Question nos.1and 5 are compulsory.**

### SECTION-A

1. Write short notes on any **SIX** of the following : (6×10=60)
  - a) Apomixis
  - b) Epiphytes
  - c) Thigmonasty
  - d) Wilting

- e) Dropsy
  - f) Bakanae
  - g) Leaf blight
  - h) Mycoherbicides
2. a) What are endophytic fungi ? Explain with examples. (3×20=60)
- b) Suggest the role of fungi for the production of pharmaceutical products taking the example of immunosuppressive drugs. Mention any two examples of such drugs.
- c) Define antibiosis taking an example.
3. a) What is biocide ? write diagrammatically mechanisms of action of biocide (3×20=60)
- b) A fruit is a matured and ripened ovary. Justify the statement. Explain the differences between simple and composite fruits taking suitable examples.
- c) What is palynology ? Differentiate between 'eurypalynous' and 'stenopalynous' pollens.
4. a) Haploidy is a boon for geneticists. Justify the statement taking suitable examples. (3×20=60)
- b) Discuss the role of dichogamy and herkogamy adaptations in preventing self pollination in plants.
- c) Somatic embryogenesis has been reported in over 500 species of dicots and monocots. Suggest various internal factors of plants playing key role in this process. How does the activated charcoal facilitate this process?

#### SECTION-B

5. Write short notes on any SIX of the followings : (6×10=60)
- a) Cryptogams
  - b) Umbelliferae
  - c) Totipotency
  - d) Somaclonal variations
  - e) Artificial seeds

- f) Parasexual hybridization  
g) Embryo rescue  
h) Open vascular bundle
6. a) How can one obtain virus free plants from infected ones using tissue culture methods? Explain with an example. (3×20=60)  
b) What are C3 and C4 plants ? Do they differ in their anatomy ? Is it really possible to make a C4 rice ?  
c) What are alkaloids? Discuss the uses of alkaloids produced from plants taking two examples.
7. a) Light is one of the most important environmental factors exerting great influences on the growth and development of plants. Justify the statement. (3×20=60)  
b) Discuss the role of vasculature in the stem and roots of woody plants in conducting light.  
c) Suggest major physiological and anatomical adaptations in 'Xerohalophytes' Give examples also.
8. Write short notes on any **SIX** of the followings : (6×10=60)  
a) Biosystematics  
b) Bran of rice  
c) Hybrid vigour  
d) Disarmed Ti- Plasmid  
e) Amphidiploids  
f) Piperaceae  
g) Green revolution and the dwarfing genes  
h) Tillering in monocots  
i) Evolution of vascular system in cryptogams.



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