

1.F.S-2009

Serial No.

18130

B-JGT-J-CPA

BOTANY

Paper—I

Time Allowed : Three Hours

Maximum Marks : 200

INSTRUCTIONS

*Candidates should attempt Question Nos. 1 and 5 which are compulsory, and **THREE** of the remaining questions, selecting at least **ONE** question from each Section.*

The number of marks carried by each question is indicated at the end of the question.

*Answers must be written in **ENGLISH**.*

Neat sketches may be drawn, wherever required.

SECTION—A

1. Answer any **FOUR** of the following (answer should not exceed 150 words in each case) :— 10×4=40
- (a) Write critical notes on the following :
- Plasmid and its types
 - Heterotrichous thallus in Algae.
- (b) Write short notes on the following :
- Structural details of *Lyginopteris oldhamia* (seed)
 - Gram staining and its importance.

- (c) Differentiate between the following :
- (i) Conjugation and transduction
 - (ii) Calyptra and capsule.
- (d) Write critical notes on :
- (i) Disease resistance in plants
 - (ii) Fungal toxins.
- (e) Write about the following :
- (i) Diatomaceous Earth
 - (ii) Differentiation between Hybrid and Cybrid.
2. (a) Define biofertilizers. Give a detailed account of microbial biofertilizers and their importance in agriculture.
- (b) Differentiate between cell culture and tissue culture. 20×2=40
3. (a) Give a detailed account of Protoplast fusion and its importance. 20
- (b) Discuss in detail the evolution of stele in Pteridophytes. 20
4. (a) Comment on the economic potential of Bryophytes and their distribution in India. 20
- (b) Define plasmogamy, karyogamy and meiosis. Narrate the types of sexual reproduction in fungi. 20

SECTION—B

5. Answer any **FOUR** of the following (answer should be within 150 words in each case) :— $10 \times 4 = 40$
- (a) Distinguish between the following :
- (i) Apogamy and Apospory
 - (ii) 'Tracheid' and 'Vessel'.
- (b) Substantiate your answer with suitable examples below :
- (i) Concept of Quiescent zone
 - (ii) Why *Gnetum* is not included in Angiosperms ?
- (c) Comment critically on the following :
- (i) Vavilov's centres of origin
 - (ii) Pollen allergy.
- (d) (i) Why do some plants have sunken stomata ?
- (ii) Distinguish between 'Spike' and 'Spadix'.
- (e) Write brief account on the following :
- (i) Cyathium
 - (ii) Botanical Gardens in India.
6. Draw the scientifically accurate diagrams of the following and label the parts correctly :— $10 \times 4 = 40$
- (a) Floral parts of an orchid and Fabaceae member
 - (b) Spikelet in poaceae and capitulum in Asteraceae

- (c) Androecium in Asclepiadaceae and cucurbitaceae
- (d) Axile and parietal placentation.
7. Write critical notes on the following :— $10 \times 4 = 40$
- (a) The importance of Palynology
- (b) Apomixis
- (c) Double fertilization
- (d) Polyembryony.
8. (a) Give a detailed account of Cordaitales and explain why they form important group. 20
- (b) Give botanical name, family and utility of each of the following :— $10 \times 2 = 20$
- (i) Red sandal
- (ii) Clove
- (iii) Quinine
- (iv) Snake Gourd
- (v) Sarpagandha
- (vi) Opium
- (vii) Teak
- (viii) Jowar
- (ix) Banana
- (x) Coriander.