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1FOS 2010

Serial No. | 16639

B-JGT-K-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.

All questions carry equal marks. Marks allotted to parts of a question are indicated against each. Answers must be written in ENGLISH only. Neat sketches may be drawn, wherever required.

SECTION—A

- Answer any FOUR of the following (answer should 1. not exceed 150 words in each case) :---
 - (a) Write critical notes on the following:-
 - Heterocyst and its functions. (i)
 - (ii) Flagella and Pili.
 - (b) Write short notes on the following:
 - (i) Phytoalexins.
 - (ii) Totipotency.

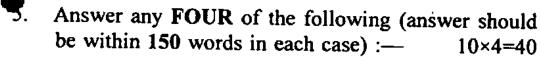
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- (c) Differentiate between the following:—
 - (i) Globule and Nucule.
 - (ii) Rein-deer moss and Peat moss.
- (d) Write about the following:-
 - (i) Morphology of the sporocarp of Marsilea.
 - (ii) Eusporangiate and Leptosporangiate ferns.
- (e) Write critical notes on :-
 - (i) Tungro Virus.
 - (ii) The concept of phytoncides.
- 2. (a) Give an account of various pigments present in algae.
 - (b) Discuss the role of mycotoxins in food and feed.
- 3. (a) Explain the molecular basis of infection in plants.
 - (b) Comment on the role of soil solarization in disease control.
 - (c) Write an account of the structural defense mechanisms in plants.
 - (d) Give a note on tissue differentiation in roots. 10
- 4. (a) Distinguish between the gametophytic generations of *Riccia* and *Marchantia*. Draw their graphic life-cycles indicating ploidy level in each phase.
 - (b) Comment on the role of Salvinia and Azolla in the environment. Compare the sporocarp of Salvinia with that of Azolla.

 $\begin{array}{ccc}
2 & \text{(Contd.)}
\end{array}$

SECTION—B



- (a) Distinguish between the following:---
 - (i) Holotype and Isotype.
 - (ii) Stomata and Hydathodes.
- (b) Give brief account of the following:—
 - (i) Angiospermic features of Gnetum.
 - (ii) Formation of Periderm.
- (c) Comment critically on the following:—
 - (i) Why gymnosperms are called naked seeded plants?
 - (ii) Anemophilous and Entomophilous pollination.
- (d) Write short notes on the following:—
 - (i) Plumbago type of embryosac development.
 - (ii) Stratification of Pollen grain walls.
- (e) Write short notes on the following:—
 - (i) Hypanthodium.
 - (ii) Inflorescence of Poaceae.
- 6. Draw the scientifically accurate diagrams of the following and label the parts correctly:— 10×4=40
 - (a) Floral parts of any type member of Euphorbiaceae and Liliaceae.
 - (b) L.S. of male and female cones of Cycas.
 - (c) Floral formula and floral diagram of Orchidaceae and Asclepiadaceae.
 - (d) Radial, collateral closed, bicollateral and amphivasal vascular bundles.

 $\frac{3}{\times \times \times}$ (Contd.)

- 7. Write brief critical notes on the following:

 8×5=40
 - (a) Ethnobotany for exploration of plant wealth.
 - (b) Distinguishing characters of Dipterocarpaceae and Ranunculaceae.
 - (c) Distinguishing characters of Magnoliaceae and Cucurbitaceae.
 - (d) Economic importance of Brassicaceae and Solanaceae.
 - (e) Plants as sources of resins and dyes.
- 8. (a) Give the botanical name, family and utility of each of the following:— 10×2=20
 - (i) Safflower.
 - (ii) Rosewood.
 - (iii) Amla.
 - (iv) Guaya.
 - (v) Sunhemp.
 - (vi) Blue vanda.
 - (vii) Kalmegh.
 - (viii)Bitter gourd.
 - (ix) Pigeon pea.
 - (x) Betel-nut.
 - (b) Explain in detail about biosystematics. 20