

**BOTANY**

Time: 3 hours

Full Marks:200

**Note: Question No 1 is compulsory and answer any four from the remaining seven questions. Figures in the margin indicate full marks for the questions.**

**1. Write short answers of any 10 (ten) 10x4=40**

- (A) Who and on what context the "*Theory of Directed Panspermia*" was proposed?
- (B) How do you correlate the '*Recapitulation theory*' with the occurrence of two types of leaves in *Acacia* plant?
- (C) What are *Glyoxysomes*? What specific functions do these organelles perform?
- (D) Who proposed the Physiological basis of differentiation of *apical meristem*? Explain.
- (E) Define and explain '*The Theory of Unit Character*'?
- (F) Briefly describe the five kingdom system of Whittaker.
- (G) .What is *Rule of Priority* ? Explain with example
- (H) .What is *Sequential Senescence* ? Mention the different theories of senescence.
- (I) .What is *Self Sterility* ? Discuss the significance of self sterility in plant breeding.
- (J) .Discuss the role of metabolic inhibitors of transpiration.
- (K) What is the need of generating of Gene Bank ?
- (L) .What is *VAM* ? Discuss its importance in nutrient intake.

**2. Attempt any 8 (eight) 8x5=40**

- (A) What are Polysomes ? What specific functions do they perform ?
- (B) What is inflexibility ? Illustrate the distribution of mechanical tissue in a monocot leaf as seen in CS.
- (C) Induction of chromosome doubling has helped in the production of artificial plants-justify the statement with the help of a suitable example.
- (D) Pteridophytes serve as evolutionary link between higher Cryptogams and phanerogams – Explain
- (E) Define biosystematics. Explain the relative importance of vegetative and reproductive characters in plants.
- (F) What are *Coenzymes* ? Discuss the roles played by nucleotides.
- (G) What is triple fusion ? Discuss the significance of the process with suitable diagrams.
- (H) Discuss the process of *non-symbiotic nitrogen fixation* with examples.
- (I) What is Restoration ecology ? Explain
- (J) Discuss in brief prospect of growing non-alcoholic beverage plants in Arunachal Pradesh

**3. Attempt any 5 (five) 5x8=40**

- (A) Illustrate Taylor's *Centipede model* of organization of DNA in chromosome.
- (B) In wheat inheritance of kernel colour is a *Polygenic effect*-Explain the phenomenon with help of checkerboard method.