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End Semester Examination of Semester-III, 2015

Subject : BOTANY (HONS.) (UG)

Paper : VII (Theory)

Full Marks : 40

Time : 2 Hrs

The figures in the margin indicate the marks corresponding to the question

Candidates are requested to give their answers in their own word as far as practicable.

Illustrate the answers wherever necessary.

Group A

A. Answer **any two** out of four questions : $10 \times 2 = 20$

a) Distinguish between constitutive heterochromatin and facultative heterochromatin. Discuss how higher order structure of chromatin (10 nm fibre) is produced. What is B chromosome? $2+6+2=10$

b) Calculate the Mean, Median and Standard deviation of the following data :

Height in inches	95-105	105-115	115-125	125-135	135-145
No. of plants	19	23	36	70	52

What is probability?

$2+3+3+2=10$

(2)

- c) Define heterosis. Describe genetic basis of heterosis in relation to the theories. Which of the theories is accepted and why? Write down application of male sterility in plant breeding. $2+4+1+3=10$
- d) What is a checkpoint of cell-cycle? Mention the function of check points. Describe the mechanism of cell cycle control in yeast. How rough endoplasmic reticulum differs from smooth endoplasmic reticulum in structure and function. $1+2+4+3=10$

Group B

2. Answer any two out of four questions : $5 \times 2 = 10$

- a) Write differences between the following :
- i) Standard deviation and Mean deviation
 - ii) Correlation & Regression. $2\frac{1}{2} + 2\frac{1}{2}$
- b) Write short notes on :
- i) Working principles of TEM
 - ii) Resolving power of a microscope $3+2=5$
- c) Write a short note on NPC classification of Erdtman. 5
- d) Why mitochondria and chloroplast are called semiautonomous organelles? Describe mt-DNA. $2+3$

(3)

Group C

3. Answer any five out of ten questions : 2x5=10

- a) What are MTOCs? What are their function?
 - b) What is standard error? Mention the formula by which it is calculated?
 - c) Define sperophellenin. What is the difference between catatrema pollen and Anatrema pollen?
 - d) Define Apomixis?
 - e) What do you mean Introgressive hybridization and distant hybridization?
 - f) Name two centre of origins for crop plants.
 - g) Write full form of VNTR; STS.
 - h) Why cedar-wood oil is used in case of oil immersion lenses?
 - i) Name one single membrane bound cell organelle. Mention its function.
 - j) What is the basic principle (working) of electron microscopy?
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