

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2004 – 05 & thereafter)

SUBJECT CODE: BT/MC/EP44

B.Sc. DEGREE EXAMINATION, APRIL 2008
BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FOURTH SEMESTER

COURSE : MAJOR - CORE

PAPER : EMBRYOLOGY AND PLANT BREEDING

TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS:

I. CHOOSE THE CORRECT ANSWER: (10 MARKS)

1. Anther is otherwise called as
a) Microsporangium b) Microspore c) Sporangium d) Microtheca
2. In sperm
a) Starch is absent b) Starch is present c) Mitochondria is absent
d) Cell wall is present
3. Peperomia embryo sac consists of
a) 2 synergids b) 1 synergid c) No synergid d) Many synergids
4. Pollen tube is produced by
a) Exine b) Intine c) Vegetative cell d) Generative cell
5. Shepherd's purse is
a) Capsella b) Capsicum c) Crotalaria d) Aristolochia
6. Golden rice is rich in
a) Gold b) Lipids c) Starch d) Vitamins
7. GM means
a) General Manager b) General Motors c) Gene Modified
d) Genetically modified
8. CRRI was established in Cuttack in the year
a) 1946 b) 1956 c) 1986 d) 1948
9. Aleurone layer is rich in
a) Lipid b) Protein c) Carbohydrates d) Minerals
10. Archeology reveals that early cultivation occurred in
a) Egypt b) Iran c) India d) Fertile crescent.

II STATE WHETHER TRUE OR FALSE (4 MARKS)

11. Emasculation is removal of ovule.
12. IARI refers to Indian Agriculture Research Institute.
13. Mutagens are chemicals that induce mutation.
14. Aduthurai is a rice research station in Tamil Nadu.

III MATCH THE FOLLOWING (4 MARKS)

- | | | |
|-------------------|---|--------------|
| 15. Cap block | - | Endosperm. |
| 16. Perisperm | - | Pollen. |
| 17. Ubisch bodies | - | Pollen tube. |
| 18. Suspensor | - | Egg |
| | - | Embryo |

IV ANSWER ANY SIX OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 50 WORDS (6 x 3 = 18)

19. Endothelium.
20. Antipodals.
21. Triple Fusion.
22. Polyploidy.
23. Selection.
24. Hybrid Vigor.
25. Clone.
26. Filiform apparatus.
27. Cleistogamy

SECTION – B

ANSWER ANY FOUR OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 200 WORDS (4 x 6 = 24)

28. Trace the development of male gametophyte in angiosperms.
29. Distinguish between tenuinucellate and crassinucellate ovules.
30. Give an account of the structure of pollen wall.
31. Define heterosis? How it is used in plant breeding.
32. How one can produce disease resistant varieties, - explain one method.
33. How is polyploidy induced – explain.

SECTION – C

ANSWER ANY TWO OF THE FOLLOWING. EACH ANSWER NOT TO EXCEED 1000 WORDS (2 x 20 = 40)

34. Trace the development of *Capsella* embryo.
35. Explain the development of monosporic embryo sac and the EM structure of *Polygonum* type of mature embryo sac.
36. Explain hybridization techniques.
37. What are the methods used for improvement of cultivation of paddy.
