



**Ramakrishna Mission**

**Vivekananda Educational and Research Institute**

**(Declared by Govt of India under Section 3 of UGC Act, 1956)**

**School of Agriculture and Rural Development**

**Faculty Centre for**

**INTEGRATED RURAL DEVELOPMENT & MANAGEMENT (IRDM)**

**Ramakrishna Mission Ashrama, Narendrapur, Kolkata: 700 103**

**Course: M.Sc.(Ag.) in Genetics and Plant Breeding (GPB)**

**SAMPLE QUESTION PAPER**

**Total Marks 50**

**Time 1 hour**

**Multiple Choice Question: 40**

**Subjective 10**

Important instructions:

- I. All questions are compulsory
- II. There is no negative marking.
- III. Underline the the right answer to the multiple choice questions

**A) Multiple choice question ( Put underline to right answer. Each question carries one mark)**

**1. The first Agricultural University of India is**

- a) Punjab Agricultural University, Punjab
- b) G.B. Pant Agricultural University, Pantanagar
- c) Bidhan Chandra Krishi Viswavidyalaya, Mohanpur
- d) Tamilnadu Agricultural University, Coimbtore

**2. Bread wheat has which genomic constitution ?**

- a) ABD
- b) ABR

- c) BDR
- d) ADR

**3. Which year is known as International Rice Year**

- a) 2004
- b) 2008
- c) 2012
- d) 2015

**4. The seed which is known as mother seed is**

- a) Foundation seed
- b) Certified seed
- c) Breeder seed
- d) Nucleus seed

**5. The fibre crop, cotton is**

- a) Self pollinated
- b) Cross pollinated
- c) Often cross pollinated
- d) None of these

**6. Mass selection is always based on**

- a) Genotype
- b) Phenotype
- c) Progeny test
- d) Heritability

**7. Curing practice is associated with which crop**

- a) Jute
- b) Tobacco
- c) Tea
- d) b and c

**8. DNA synthesis takes place during**

- a) M phase
- b) G1 phase
- c) G2 phase

d) S phase

**9. Boro rice is also known as.....**

- a. Kharif rice
- b. Rabi rice
- c. Summer rice
- d. None of these

**10. Parboiling of rice conserve the vitamin ...?**

- a. Vitamin A
- b. Vitamin B<sub>12</sub>
- c. Vitamin C
- d. All of these

**11. First intergeneric cross was made between.....**

- a. Carrot and Cabbage
- b. Bread wheat and Rye
- c. Rice and wheat
- d. None of these

**12. On maize, plants first appearance is of**

- a. Female inflorescence
- b. Male inflorescence
- c. Both
- d. None of these

**13. Which of the following method does not include hybridization ?**

- a. Backcross method
- b. Pedigree method
- c. Mutation breeding
- d. Bulk breeding method

**14. C:N ratio of F.Y.M.....**

- a. 50:1
- b. 100:1
- c. 25:1
- d. 75:1

- 15. How many centres of origin is given by Vavilov?**
- a. 10
  - b. 12
  - c. 8
  - d. 5
- 16. Tift 60 is an important source of male sterility in ...**
- a. Maize
  - b. Rice
  - c. Sorghum
  - d. Wheat
- 17. Father of genetic engineering.....**
- a. Watson and Crick
  - b. Robert Brown
  - c. Paul Berg
  - d. Mc'Clintock
- 18. The first step of summarizing the data is....**
- a. Evaluation
  - b. Classification
  - c. Interpretation
  - d. None of these
- 19. What is/are the basic steps of field experimentation?**
- a. Replication
  - b. Randomization
  - c. Local control
  - d. All of these
- 20. National Biodiversity Board is situated at....**
- a. New Delhi
  - b. Kolkata
  - c. Chennai
  - d. Mumbai
- 21. Father of genetics.....**
- a. Darwin
  - b. Mendel
  - c. Frankel

d. Johansson

**22. The simplest measure of variability in data set is**

- a. Range
- b. Mean
- c. Mode
- d. Median

**23. Respiration in plant is essentially a process related to the following**

- a. Evaporation
- b. Transpiration
- c. Oxidation
- d. None of these

**24. Linkage between gene affects**

- a. Vernalization
- b. Fertilization
- c. Anaphase
- d. Independent assortment

**25. A criss-cross inheritance is shown by :**

- a) Sex influenced character
- b) Sex limited character
- c) Sex linked character
- d) None of these

**26. Pure line variety is a**

- a) Homozygous ----- heterogenous
- b) Homozygous ----- homogenous
- c) Heterogenous ----- heterogenous
- d) Heterogenous ----- homozygous

**27. DNA contains following number of nitrogenous base**

- a. One
- b. Two
- c. Three

d. Four

**28. Cultivated rice *Oryza sativa* has the following number of chromosomes**

a.  $2n=32$

b.  $2n=20$

c.  $2n=24$

d.  $2n=18$

**29. Alternate form of gene at the same locus are referred to as**

a. Allele

b. Plastid

c. Chromosome

d. Dominant

**30. Cryo-preservation is done in liquid nitrogen at a temperature of**

a.  $-196\text{ }^{\circ}\text{C}$

b.  $200\text{ }^{\circ}\text{C}$

c.  $0\text{ }^{\circ}\text{C}$

d.  $4\text{ }^{\circ}\text{C}$

**31. Central dogma in molecular biology is**

a. RNA to DNA to Protein

b. DNA to RNA to Protein

c. RNA to Protein to DNA

d. DNA to Protein to RNA

**32. Polyploidy is induced through**

a) Irradiation

b) Mutagenic chemicals

c) Ethylene

d) Colchicine

**33. Which of the following does not occur in the interphase of eukaryotic cell division?**

a. Increase of ATP synthesis

b. Decrease of DNA synthesis

c. Increase of RNA synthesis

d. Reduction of cell size

**34. Elongation of internode is caused by**

- a. Ethylene
- b. Gibberellin
- c. Abscisic acid
- d. Cytokinin

**35. Malacophilly is the pollination by**

- a. Insects
- b. Birds
- c. Snails
- d. Mammals

**36. Two related but geographically isolated species are known as ..**

- a. Sibling species
- b. Sympatric species
- c. Taxonomic species
- d. Allopatric species

**37. What will be the percentage of guanine in a DNA molecules having 20% adenine?**

- a. 20%
- b. 30%
- c. 40%
- d. 60%

**38. Endosperm nucleus is .....**

- a.  $n$
- b.  $2n$
- c.  $3n$
- d.  $4n$

**39. Genes for maternal inheritance are located in .....**

- a. Golgibodies

- b. Mitochondria
- c. Lysosomes
- d. Nucleolus

**40. Stock and scion are used in**

- a. Cutting
- b. Grafting
- c. Layering
- d. Micropropagation

**B) Subjective type question (answer in brief) (2+2+ 3 = 7)**

1. Why did Mendel select garden pea plant for his study?
2. State law of segregation and law of independent assortment.
3. What is the difference between selfing and inbreeding.

**C) Give the full form of the followings abbreviated forms**

(0.5x 6=3.0)

- a) ICAR
- b) ICRISAT
- c) CRIJAF
- d) FAO
- e) IRRI
- f) CRIDA