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SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

Sardar Patel University  
Sixth Semester TYBSc examination-2019  
Subject-Genetics

Course-US06CGEN03 - Principles of Genetics & Breeding

Time : 10 am to 1.30pm

Date:29 /03 /2019, Friday Total Marks-70

Q.1 Multiple Choice Questions (one mark each)

10M

- 1 Semidwarf variety of wheat was developed by  
A) Borlaug B) Lush C) Shell D) Morgan
- 2 Centres of origin was proposed by  
A)Johanson B) Vavilov C) Swaminathan D) None of above
- 3 When Flowers do not open at all, this phenomenon is referred as  
A) Chasmogamy B) Dicliny C) Protogyny D) Cleistogamy
- 4 A place region or area where maximum variability of crop plants is observed is  
A) Genetic diversity B)Microcentres C) Gene sanctuaries D) Centers of diversity
- 5 Pollen sterility which is controlled by both cytoplasmic and nuclear genes  
A) GMS B) CMS C) CGMS D) All the above
- 6 The term heterosis was coined by  
A) Hull(1945) B)Bruce (1910) C) East (1908) D) Shull (1914)
- 7 International crop improvement Institutes are  
A) ICRISAT B) IPGRI C) Both A & B D) ICAR
- 8 Development of embryo without fertilization is called  
A)Apomixis B) Anthesis C) Both A & B D)None of above
- 9 The first opening of flower is called  
A)Pollination B) Anthesis C) Both A & B D)None of above
- 10 White colour tag is for \_\_\_\_\_ class of seed  
A) Foundation B)Certified C) Breeder D) Nucleus

Q.2 Short questions : Attempt any TEN (each carries two marks)

20M

- 1 Write full form and headquarter of ICRISAT and CAZRI
- 2 Define gene pool and give its types
- 3 Define domestication and acclimatization
- 4 Differentiate between cross breeding and Line breeding
- 5 Give effects of self-pollination

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- 6 Define Heterosis and inbreeding depression
- 7 Enlist markers used in plant breeding
- 8 What are QTL? Give its applications
- 9 Give full form of SCAR and SNP and its applications
- 10 Give two examples of each self-pollinated and asexually propagated crops
- 11 Why seed certification is required? Name the act for the same
- 12 Enlist the Institutes for crop improvement
- Q.3 Write a short note on  
 a. Activities in plant breeding 4M  
 b. Centers of Origin 6M
- OR**
- Q.3 a. Write a note on important achievements in plant breeding 4M  
 b. Discuss germplasm conservation 6M
- Q.4 a. Give an account of Mutation breeding 5M  
 b. Write a note on Seed certification act 5M
- OR**
- Q.4 Write short notes on  
 a. Methods of breeding 7M  
 b. CGMS system 3M
- Q.5 Write short notes on  
 a. Selection as a factor changing gene frequency 7M  
 b. Inbreeding depression 3M
- OR**
- Q.5 Discuss in detail HW law and its applications 10M
- Q.6 Discuss in detail any three molecular markers used in plant breeding and also write about advantages and disadvantages of marker assisted selection. 10M
- OR**
- Q.6 a. What are Near Isogenic Lines ? Discuss process to obtain NIL 5M  
 b. Write a note on bulk segregating analysis 5M