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(50) SEAT No._____ No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY

B.Sc. (Genetics) – Sixth Semester Examination (CBCS)

Saturday, 31st March 2018

Time : 10:00 a.m. to 1:00 p.m. Total Marks: 70

US06CGEN03: Principles of Genetics and Breeding

Q.1 **Choose the most appropriate answer from the four alternatives given** **10M**

i _____ is example of International crop improvement centre
A)ICRISAT B) IPGRI C) Both A and B D) None of above

ii _____ promotes self pollination
A) Chasmogamy B) Cleistogamy C) Both A and B D)None of above

iii SCAR are usually _____markers
A) Dominant B) Recessive C) Both A and B D)None of above

iv To develop NIL _____parents are used
A) Donor B) Recurrent C) Both A and B D)None of above

v Resistant bulk and susceptible bulk are part of
A) NIL B) BSA C) Both A and B D)None of above

vi The marker relies on secondary and tertiary structural differences of denatured DNA is--
A) SSCP B) RAPD C) RFLP D)None of above

vii QTL is for
A) Monogenic trait B) Polygenic trait C) Both A and B D) None of above

viii First hybrid variety of cotton was produced by_____ Agri. University
A)Gujarat B) Punjab C) Both A and B D) All of above

ix Hardy was from_____ and Weinberg from _____ Given HW law
A)England & Germany B) England & France C)America & France D) None of above

x Gene pool concept was proposed by
A) Shull B) Morghan C) Harlan and De Wet D) All of the above

Q.2 **Answer any TEN from the following** **20M**

i Define domestication and acclimatization
ii Define gene pool and gene introgression
iii Define Cross breeding and Line breeding
iv What are theories for heterosis?
v Derive the Δq for migration
vi Enlist different methods for SNP studies
vii What are QTL ?

(P.T.O.)

viii What are different types of marker?
ix Define Inbreeding and Inbreeding depression.
x What is SSCP?
xi What are applications of Hardy Weinberg law ?
xii What is marker assisted selection?

Q.3 a. Write a elaborate note on germplasm collection and conservation. 5M

b. Write a note on activities in plant breeding 5M

OR

Q.3 a. Write a note on Centres of origin 5M

b. Write a note on important achievements in plant breeding 5M

Q.4 a. Write a elaborate note on methods in plant breeding 6M

b. Write a note on CGMS 4M

OR

Q.4 a. Write a detail note on Seed certification , multiplication and seed purity standards 6M

b. Write a note on mutation breeding 4M

Q.5 Write a detail note on Hardy Weinberg principle and its use 10M

OR

Q.5 Write a detail note on factors affecting changes in allele and genotype frequencies 10M

Q.6 a Write a detail note on SCAR and AFLP markers 6M

b Write a brief note on NIL(near isogenic line)strategy 4M

OR

Q.6 a What is MAS ? Write of use of molecular markers in breeding 5M

b Write a note on Bulk segregant analysis (BSA) 5M