

DEPARTMENT OF ANTHROPOLOGY

PANJAB UNIVERSITY, CHANDIGARH

**CLASS: M.Sc. 4<sup>TH</sup> SEMESTER**

**PAPER: AHS-549A  
GENE FLOW AND QUANTITATIVE GENETICS**

DATE: 03.10.2020

TIME 02:00 – 04:00 PM

**All questions carry equal marks. Four questions are to be attempted by the students in total including the compulsory question. 8<sup>th</sup> question is compulsory.**

- Q 1. Explain different models to study genetic effects of gene flow due to human migrations, giving suitable examples. 8 marks
- Q2. What is Sewall Wright effect? Explain how it plays an important role in evolution. 8 marks
- Q3. Describe the following in brief: 2x4= 8 marks  
(a) Drift and fixation.  
(b) Population bottleneck
- Q4. Describe the following in brief: 2x4= 8 marks  
(a) Wahlund principle  
(b) Phenotype plasticity
- Q5. What is quantitative traits and its types? Also show how quantitative traits are different from qualitative traits. 8 marks
- Q6. Explain the role of genotyping and environmental components in phenotypic variation. 8 marks
- Q7. How can we estimate heritability? Write a brief note on heritability with explain Artificial heritability. 8 marks
- COMPULSORY QUESTION**
- Q8. Describe the following- 2x4= 8 marks  
(a) Quantitative traits loci (QTL)  
(b) Racial admixture and its calculations