

**ST.JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)  
CUDDALORE – 1  
PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY**

**II-M.Sc Biochemistry**

**QUESTION BANK**

**Subject: Developmental and Inheritance Biology    Subject code: EPBC912A**

**Subject handled: 1. Dr.S.Silvan**

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**PART A**

1. What is linkage map?
2. Define heritability.
3. Explain Broad sense heritability.
4. Explain Narrow sense heritability.
5. What are the factors affecting heritability?
6. What are the estimation methods to analyse the heritability?
7. Kolerenter is known as father of polygenic inheritance.
8. What is karyotypes?
9. Define polygene.
10. What is polygenic inheritance?
11. Define QTLs mapping.
12. QTLs mapping first coined by Gelderman in 1975
13. Define Single-Marker analysis
14. Define Simple Interval mapping
15. Define Composite Interval mapping
16. Define somatic cell hybridization.
17. What is LOD scoring?
18. LOD scoring was Developed by Newton E. Morton
19. Define genome.
20. What is locus?
21. What is physical mapping?
22. What is genetic markers?
23. What are types of molecular markers?
24. What is chromosomal markers?
25. Write the principle of RFLP.
26. Write the principle of AFLP.
27. Write the principle of RAPD.
28. What is SNP?
29. What is SSRs?
30. Define limb field
31. What is blastema?

32. What are the zones of retina?
33. Define optic stalk
34. Write the importance of oraserrata.
35. Write the laws of regeneration.
36. What are the divisions of limb?
37. Define consanguinity.
38. What is Ageing?
39. What are the effects of Ageing?
40. Explain the main metabolic pathways which can influence the rate of ageing.
41. What is Senescence?
42. What are the factors that cause ageing?
43. What is apoptosis?
44. What are the types of cell death?
45. Define necrosis.
46. What are the morphological changes in apoptosis?
47. What are the biochemical changes in apoptosis?
48. Name the pathways of apoptosis.
49. What is death receptor?
50. Explain adaptor proteins.
51. What are the methods to assay the apoptosis?
52. Carl Vogt was first to describe the principle of apoptosis.
53. Name the inducers of apoptosis.
54. What is stem cell?
55. What is Totipotent?
56. What is Pluripotent?
57. What is Multipotent?
58. What is Oligopotent?
59. What is Unipotent?
60. What are the unique properties of all stem cells?
61. What are embryonic stem cells?
62. Define Primordial germ cells?
63. What is germplasm?
64. What is maturation phase?
65. Define Spermiogenesis?
66. What is Proacrosomal granule?
67. What is Oogenesis?
68. What is the changes occurs in previtllogenesis and vitellogenesis?
69. Define amplification.
70. Define Insitu origin.
71. Define Exogenous origin.
72. Define Macrovilli and microvilli.
73. Define first polar body.
74. Define second polocyte.
75. Mention any two functions of sperm.
76. Mention any three functions of egg.
77. Define Morula.

78. What is coeloblastula?
79. What is holoblastic cleavage?
80. Define bilateral cleavage.
81. Define spiral cleavage.
82. What is meroblastic cleavage.
83. What is gastrulation?
84. Define ectoderm.
85. Define mesoderm.
86. What is exogastrulation?
87. What is Polyspermy?
88. Define Acrosome.
89. Define Shoot development.
90. What does it mean by shoot?
91. Define Phyllotaxis.

## **PART B**

1. Explain about Linkage maps
2. Write notes on the development of mapping population in plants.
3. Explain about Pedigree analysis.
4. Detailed account on LOD score for linkage testing.
5. Explain about QTL mapping.
6. Explain the types of regeneration
7. Give a brief note on development of lens
8. Write a short note on sex determination.
9. Write notes on Stem cells & properties
10. Give an account on Spermiogenesis.
11. Write a short note on Oogenesis.
12. Write a note on Previtellogenesis.
13. Give an account on vitellogenesis.
14. Give an account of polar body.
15. Write a note on functions of sperm.
16. Give a brief account on the membrane of egg.
17. Give a brief account on chemotaxis.
18. Explain the physiological changes in fertilization.
19. Explain the types of cleavage.
20. Explain the process of Gastrulation.
21. Explain fertilizin and anti-fertilizin reaction.
22. Write a short note on acrosome reaction.
23. Explain the shoot development in plants.
24. What is apical meristem?
25. Explain about shoot apical meristms.
26. Explain the phyllotaxis.
27. Write a short note on process of transition in flowers.
28. Explain the process of meristem.
29. Explain the types of regeneration
30. Give a brief note on development of lens
31. Write a short note on sex determination.

### **PART C**

1. Briefly explain about mapping with molecular markers,
2. Give an account on mapping by using somatic cell hybrids,
3. Write an essay on polygenic inheritance.
4. Explain about heritability and its measurements.
5. Give a detailed note on stages of development of eye
6. Explain the development of limb
7. Write a detailed note on post embryonic development
8. Briefly explain about Ageing & theories of ageing.
9. Write an essay on programmed cell death.
10. What are the markers commonly used in stem cells?
11. Give an account on embryonic stem cells and applications.
12. Give a detailed note on stages of development of eye
13. Explain the development of limb
14. Write a detailed note on post embryonic development
15. Explain the gametogenesis process in animals.
16. Write a note on Spermetogenesis and Oogenesis.
17. Explain detailed mechanism of acrosome reaction.
18. Explain the mammalian cleavage mechanism.
19. Explain the detailed process of gastrulation.
20. Write a note on embryo sac development and double fertilization in plants.
21. Explain the shoot and root development in plants.