

Paper-109.

M. Sc. Zoology

(Fourth) 4th Semester (P-109)

F.M-70

Answer Q1 and Q2 is Compulsory
Where as Answer any three from Gr. B & Gr. C.

Q1 :- Choose the correct Answer

- (a) Stem cells can be obtained from -
 (i) embryos (ii) Some adult tissues
 (iii) Umbilical cord Blood (iv) All of the above

- (b) What is metamorphosis?
 (i) A change in the state of matter from solid to liquid
 (ii) A change in shape or form
 (iii) Some time that happens to all animals
 (iv) A brief power surge

- (c) How many genes are formed in this Alleles AaBbCc
 (i) 2
 (ii) 4
 (iii) 6
 (iv) 8

- (d) Addition or deletion of bases causes which kind of mutation?
 (i) Transversion (ii) Transition (iii) Transcription
 (iv) Frame shift mutation

- (e) Recessive gene can be expressed in

- (i) Homologous condition
 (ii) Heterozygous condition
 (iii) Heterozygous dominant condition
 (iv) None of these

- (f) Which of the following has the self repairing mechanism
 (i) DNA and RNA (ii) DNA, RNA and protein (iii) Only DNA (iv) DNA & Proteins

(g) Linkage results in —

- (i) Formation of more dominant phenotype
- (ii) Formation of more wild phenotype
- (iii) Formation of more parental phenotype
- (iv) Formation of more recombinant phenotype.

(h) An embryonic stem cell can be described as —

- (i) Totipotent
- (ii) Pluripotent
- (iii) Multipotent
- (iv) Unipotent

(i) Which gland plays a key role in metamorphosis of Frog's tadpole —

- (i) Thyroid
- (ii) Adrenal
- (iii) Thyroid
- (iv) Pancreas

(j) Grey Crescent in the preblastula of

- (i) Ectoderm
- (ii) Mesoderm
- (iii) Endoderm
- (iv) All of the above

Q2:- Write short notes on any three — 5×3 = 15
of the following —

- (a) DNA finger printing
- (b) LeeBoot effect
- (c) Blastulation
- (d) Implantation
- (e) Super-Ovulation
- (f) Sperm maturation in male reproductive tract
- (g) Gene mutation
- (h) Holoblastic cleavage.

Answer any three from these two Groups Set II
15X3
Gr. B. Not more than two - from any Group.

Q3. What is Gastrulation? Describe the process of gastrulation in detail. (15)

Q4. What is differentiation? Describe the molecular biological levels and control of differentiation. (15)

Q5. What do you mean by the term. Metamorphosis. Describe the process of hormonal Regulation of ~~Anuran~~ Amphibian metamorphosis, (15)

Gr. C.

Q6. What is induced Mutation? Describe the methods for detection of induced mutation. (15)

Q7. What is Linkage? Describe the phenomena of linkage in detail - (15)

Q8. What do you understand by Gene mapping? Explain it with 3-point & test cross in *Drosophila*.

Objective Answers

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|-----------|-----------|
| (a) (i) | (g) (iii) |
| (b) (ii) | (h) (ii) |
| (c) (ii) | (i) (iii) |
| (d) (iv) | (j) (i) |
| (e) (i) | |
| (f) (iii) | |

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