

- 2 B.Alberts, D.Bray, J.Lesis, M.Raff, K.Roberts, and J.D. Watson : Molecular Biology of the Cell, Garland Publishing Inc., New York.
- 3 G.Karp, Cell and Molecular Biology John, Willey.
- 4 David Freifelder, : Molecular Biology Narosa Publications
- 5 T.A. Brown, : Gene cloning- IV Edition. Chapman and Hall.

M.Sc. (PREVIOUS) ZOOLOGY- 2005-06

PRACTICAL-I

Duration : 5 hours per day for two days M.M. 100

<u>S.No.</u>	<u>Exercise</u>	<u>Regular</u>
1	Major Dissection	20
2	Minor Dissection	15
3	Slide Preparation	10
4	Developmental Biology	15
5	Spotting (1-10)	20
6	Viva-voce	10
7	Record	10
	Total :-	100

1 **STUDY OF MUSEUM SPECIMENS**

(A) PROTOZOA

Amoeba proteus w.m., *Paramecium* w.m.,
Paramecium fission, *Paramecium* conjugation,
Plasmodium (signet ring), *Vorticella* w.m.,
Nyctotherus w.m., *Entamoeba histolytica* w.m.,

(B) **PORIFERA**

Hyalonema, Euplectella, Leucosolenia, Cliona, Spongilla, Chalina, Euspongia, Sycon, Hircinia, Grantia, Olynthus

(C) **COELENTERATA**

Physalia, Porpita, Gorgonia, Metridium, Aurelia, Corallium, Adamsia, Edwardsia, Cerianthus, Fungia, Pennatula, Madrepora, Vellela, Sagarita, Renilla, Zoanthus, Favia, Virgularia, Millepora, Alcyonium.

(D) **PLATYHELMINTHES AND ASCHELMINTHES**

Taenia, Fasciola, Echinococcus, Ascaris (male and female), Dracunculus, Dugesia.

(E) **ANNELIDA**

Polynoe, Phoronis, Chaetopterus, Pontobdella, Nereis, Heteronereis, Hirudinaria, Glycera, Eunice, Terebella, Arenicola, Bonelia, Aphrodite, Eurythoe

(F) **ARTHROPODA**

Squilla, Palaemon, Scolopendra, Julus, Queen termite, Papilio, Bombyx mori, Vespa, Sacculina on Crab, Locust, Carcinus, Limulus, Hermit crab, Balanus, Peripatus, Pediculus, Lepisma, Phyllium, Mantis religiosa, Palamnaeus, Cimex, Lepas

(G) **MOLLUSCA**

Lentulus, Torpedo, Chiton, Anusia, Doris.

Margertifera, Turbinella, Ostrea, Pinctada, Solen, Loligo, Limax, Pecten, Nautilus, Patella.

(H) **ECHINODERMATA**

Asterias, Ophioderma, Clypeaster, Echinus, Holothuria, Antedon, Ophiothrix

2 **STUDY OF PREPARED SLIDES**

(A) **PORIFERA**

L.S. of *Grantia*, T.S. of *Sycon*, L.S. of *Sycon*, *Leucosolenia*. Spongin fibres, Gemmule, Spicules.

(B) **COELENTERATA**

Hydra with bud, T.S. of *Hydra*, L.S. of *Hydra*, T.S. of Testes of *Hydra*, T.S. of Ovary of *Hydra*, *Obelia* colony.

(C) **PLATYHELMINTHES AND ASCHELMINTHES**

Schistosoma W.M., *Taenia* immature proglottid, *Taenia* mature proglottid, *Taenia* gravid proglottid, Miracidium larva. W.M., Sporocyst larva W.M., Cercaria larva W.M., Redia larva W.M., T.S. of gonads of *Fasciola*, T.S. of *Planaria*, T.S. of *Ascaris* male, T.S. of *Ascaris* female, *Trichinella spiralis* cyst, W.M., *Enterobius* W.M., *Ancylostoma* W.M.

(D) **ANNELIDA**

Tubifex W.M., septal nephridia of *Pheretima*, L.S. of anterior region of *Pheretima*, T.S. through

T.S. of typhlosolar region

of *Pheretima*, T.S. through gizzard of *Pheretima*, T.S. through prostate gland of *Pheretima*, T.S. through stomach of *Pheretima*, W.M. of jaw of *Hirudinaria*, T.S. of *Neries*, W.M. of *Glossiphonia*.

(E) ARTHROPODA

W.M. of *Culex* male, W.M. of *Culex* female, W.M. of pupae of *Culex*, W.M. of pupae of *Anopheles*, W.M. of *Anopheles* male, W.M. of *Anopheles* female, Mouth parts of male *Culex*, Mouth parts of female *Culex*, Mouth parts of male *Anopheles*, Mouth parts of female *Anopheles*, Different types of mouth parts, Different types of legs: jumping, clinging, running, pollinating, W.M. of *Pediculus*, W.M. of *Xenopsylla*, W.M. of *Lucifer*, W.M. of Zoea larva, W.M. of Nauplius larva, W.M. of Metanauplius, W.M. of *Mysis*, W.M. of *Caprella*, W.M. of *Cypris*, W.M. of Alima larva, W.M. of trachea of *Periplaneta*, W.M. of salivary glands of *Periplaneta*, W.M. of larva of *Anopheles*.

(F) MOLLUSCA

T.S. of *Lamellidens*, T.S. of *Lamellidens* through foot, T.S. gill of *Lamellidens*, Glochidium larva, Veliger larva, W.M. of radula of *Pila*, T.S. of osphradium of *Pila*.

(G) ECHINODERMATA

C.S. of arm of *Asterias*, T.S. of tube feet of *Asterias*, W.M. of pedicellaria of *Asterias*, W.M. of

3 PERMANENT PREPARATIONS OF THE FOLLOWING :

- (a) Protozoa : Preparation of culture of various protozoans, mounting of various protozoans including parasitic forms
- (b) Porifera : Gemmules, spicules, spongin fibres
- (c) Coelenterata : *Obelia* colony medusa, *Pennaria*, *Sertularia*, *Plumularia*, *Companularia*, *Hydra*, *Hydra* with gonads.
- (d) Helminthes : Immature, mature and gravid proglottids, scolex of *Taenia*, larval forms
- (e) Annelida : *Pheretima* : Ovary, septal nephridium, seta (*in situ*) spermatheca, Parapodia of *Neries* & *Heteroneries*, trochophore larva, *Hirudinaria*: Jaws and testicular nephridia.
- (f) Arthropoda : *Apis* : Sting apparatus *Periplaneta* : Salivary glands, testes, spermatheca. Mounting of various types of mouth parts. Mounting of various larval forms
- (g) Mollusca : *Pila* : Mounting of gill, osphradium and radula, *Lamellidens* : Gill lamella.
- (h) Echinoder- : Mounting of larval forms