

L: Zoology**Q. 1 – Q. 10 carry one mark each.**

- Q.1 Acorn worms (*Saccoglossus sp.*) belong to which ONE of the following Phyla?
(A) Platyhelminthes (B) Achelminthes
(C) Hemichordata (Chordata) (D) Annelida
- Q.2 A population of Bees develops resistance to pesticides and the trait gets fixed within a few generations. This is an example of
(A) macroevolution. (B) disruptive selection.
(C) stabilizing selection. (D) microevolution.
- Q.3 The nature of the polymorphic DNA fragment used for mapping is
(A) dominant. (B) partial dominant.
(C) co-dominant. (D) recessive.
- Q.4 The sex of a *Drosophila melanogaster*, which has 4 copies of X-chromosomes and 4 sets of autosomes will be
(A) female. (B) male. (C) metafemal. (D) metamale.
- Q.5 Which of the following cations are found in higher concentration in extracellular fluid as compared to intracellular fluid in animals?
(A) Na^+ and Ca^{++} (B) K^+ and Ca^{++} (C) K^+ and Mg^{++} (D) Na^+ and Mg^{++}
- Q.6 Detoxification of alcohol occurs in liver cells where peroxisomal enzymes remove hydrogen from it, which is
(A) combined with water molecules to generate hydrogen peroxide.
(B) used to break down hydrogen peroxide.
(C) transferred to the mitochondria.
(D) transferred to oxygen molecules to generate hydrogen peroxide.
- Q.7 When cells are treated with cyanide, which ONE of the following organelles will have the highest level of cyanide inside?
(A) Mitochondria (B) Peroxisomes (C) Lysosomes (D) Endoplasmic reticulum
- Q.8 Toxoplasmosis in humans is caused by *Toxoplasma gondii*, an obligate intracellular parasite with two different life cycles, sexual and asexual. The sexual cycle occurs in which ONE of the following definitive hosts?
(A) Dog (B) Cat (C) Rat (D) Human
- Q.9 Which ONE of the following is often a life-threatening systemic inflammatory response?
(A) Tuberculosis
(B) Lupus erythematosus
(C) Septic shock
(D) Hypertension
- Q.10 During the gastrulation stage of amphibian development, ectoderm formation takes place by the expansion of epithelial cell sheet over mesodermal cells. This type of cell movement is termed as
(A) ingression. (B) epiboly. (C) involution. (D) delamination.

- (A) normal development with one each of head, thorax and abdomen.
- (B) head in the middle with two thoraces and two abdomens.
- (C) a head with two thoraces and an abdomen.
- (D) two heads and two thoraces with an abdomen segment in the middle.

Q.19 The migratory desert locust, *Schistocerca gregaria*, exists in two mutually exclusive forms: a short-winged, uniformly colored, solitary insect and a long-winged, brightly colored, gregarious morph. These phenotypes depend on crowding. Such phenotypic plasticity is called

- (A) reaction norm.
- (B) polyphenism.
- (C) Batesian mimicry.
- (D) polymorphism.

Q.20 Given below is the list of animals and their respective characteristics.

<i>Animals</i>	<i>Characteristics</i>
I. Sea anemone	i. Three pairs of jointed legs
II. Bluefly	ii. Diploblastic acoelomate
III. Starfish	iii. Collar cells
IV. Sponge	iv. Tube feet

Which ONE of the following represents the correct match?

- (A) I-iv; II-i; III-ii; IV-iii
- (B) I-iii; II-i; III-iv; IV-ii
- (C) I-ii; II-i; III-iv; IV-iii
- (D) I-ii; II-i; III-iii; IV - iv

END OF THE QUESTION PAPER