**FORM 4 PREDICTOR 2, 2025**

***EXAMINATION 2025***

***BIOLOGY PAPER ONE MARKING SCHEME***

1. *Genetics;*
2. *Reproduction, Movement and locomotion, Growth and development, Irritability*
3. *(i)Pit fall trap;*

*(ii) Trap into which small crawling animals fall and get trapped;*

*a) Guttation*

*b) Guttation is the process by which plants loose water in form of droplets through hydathodes while transpiration is the loss of water in form of water vapour through stomata*

*5.(a) 8 chromosomes (b) 24 chromosomes*

*6. (a) Fossils are past materials/ remains of ancestral forms of organisms that were accidentally preserved in naturally occurring materials; (OWTTE)*

 *(b) – Only partial preservation was possible due to soft parts decayed;*

 *- Distortion during sedimentation;*

*- A subsequent geological activities (erosion, earthquakes, faulting) destroyed some fossils;*

*7. (a) Leukemia (b) Sickle Cell Anaemia*

*8. a) Provides acidic medium for enzyme pepsin;*

* *Activates pepsinogen (inactive) to pepsin active);*
* *Kills pathogenic micro – organism swallowed in food/ antiseptic;*

*b) Oxyntic/Parietal cells;*

*9. (i)* ***Entamoeba******histolytica****;*

 *(ii)* ***Schistosoma******spp;*** *acc. Specific species*

*10. - Swallow plenty of sea water to increase amount of water in the body*

* *Have chloride secretory cells in their gills to remove excess salts;*
* *Eliminates nitrogenous waste in form of trimethylamine oxide which requires little water for elimination;*
* *Few/small glomeruli thus slow filtration rate in the kidneys; (any 3)*

*11. (i) Primary consumers; √ (ii) Secondary consumers; √*

*12. a) Respiration*

 *b) Glycolysis*

*13. a) Lenticel*

 *b) Hand lens/Magnifying lens*

*14. Pulmonary artery*

*15. (a) Plasmodium species//Plasmodium vivax//Plasmodium malariae//Plasmodium ovale//Plasmodium falciparum*

*(b) Red blood cells//Erythrocytes.*

*(c) Fish feeding on the larvae;*

*16.(a) Rough //sticky to stick onto the body of the insect;*

 *(b) Occur inside the flower ensuring that the insects brush against them as they look for nectar;// Sticky so that pollen grains from the body of an insect stick onto it; any 1*

*17. (a) Water pollution;*

*(b) Oil soaks the feathers hindering locomotion;*

 *Birds remove oil using their beaks swallowing some of the oil causing poisoning;*

*18. (a) Positive Chemotropism;*

 *(b) Negative Phototaxis;*

*19. Cell division;//Growth;//respiation*

*20.Length of one cell= Diameter of field of view in um ; 6000 um = 1000um;*

 *Number of cells 6*

*21.Dissolve food substances//soften testa//hydrolyze food substances//activate enzyme any 2*

*22.Hybrid vigour; Causes variations;*

*23. Segmented body;*

*Jointed appendages;*

*Presence of exoskeleton;*

*(b)Blocks the spiracles and thus no inhalation;*

*24. Formation of new species;*

*Elimination of undesirable characteristics;*

*25. Tip has a higher concentration of auxins; when the tip of shoot is removed auxin concentration is lowered; less auxin concentration stimulates sprouting of lateral btranches;*

*26. a) Motor neurone; transmit nerve impulses from central nervous system to the effectors;*

*(b) Cerebrum;*

*27. Radial muscles of the iris contract, circular muscles relax; and pupil enlarges this allows more light for perception of objects;*

*28. The auxins migrate to the dark side; and cannot diffuse downwards due to the blade; hence no curvature*

*29 Terrestrial - Uric acid*

 *Fresh water -Ammonia;*

 *Marine - Trimethylamine oxide*

*30. (a) Sertoli cells – nourishment of spermatids/ immature sperms/ sperm cell / spermatozoa;*

*(b) Epidydimis – site for temporary storage of sperm cells / contracts to allow ejaculation of*

*sperms;*

 *(c) Seminiferous tubule – site for spermatogenesis/ sperm synthesis/ sperm formation;*

*31. (a) Mutation I – Deletion;*

 *Mutation II – Inversion;*

 *(b) Gene mutation – changes in the sequence of nucleotide in a DNA sequence;*

 *Chromosomal mutation – changes in chromosome structure or number;*