

**UNIVERSITY OF FORT HARE**

**ANIMAL BIOLOGY  
BIO 121**

**SUPPLEMENTARY EXAMINATIONS**

**JANUARY**

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**Time: 2HRS**  
**Subject: BIO 121**  
**Marks: 100**

**This paper consists of 10 pages including the cover page**

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**INSTRUCTIONS**

**Answer ALL questions.  
Answer using the Multiple Choice Answer Sheet.  
Use ONLY an HB-pencil to complete  
Submit this question paper together with the Multiple Choice Answer Sheet.**

## Answer ALL questions.

Use ONLY an HB-pencil to complete

- 1) When classifying organisms, Order comes before \_\_\_\_\_
  - a) Class.
  - b) Kingdom.
  - c) Species.
  - d) Family.
  - e) Genus
- 2) \_\_\_\_\_ is a fluid-filled space that surrounds the gut.
  - a) Cavity.
  - b) Coelom.
  - c) Blastocoelomate
  - d) Acoelomate.
  - e) Eucoelomate.
- 3) \_\_\_\_\_ are animals that do not have a true coelom.
  - a) Pseudocoelomate Bilateria
  - b) Acoelomate Bilateria
  - c) Coelomate Bilateria
  - d) Blastocoelomate Bilateria
  - e) Eucoelomate Bilateria
  - f) Annelida, Arthropoda and Cnidaria.
- 4) Autotroph plant-like Protists **does not** include \_\_\_\_\_.
  - a) diatoms.
  - b) green algae.
  - c) red algae.
  - d) ciliates.
  - e) dinoflagellates.
- 5) Which one of these **does not** display a heterotrophic behaviour?
  - a) amoeboids
  - b) ciliates
  - c) euglenoids
  - d) zooflagellates
  - e) sporozoans
- 6) The sexual phase of *Plasmodium* takes place inside a \_\_\_\_\_.
  - a) liver.
  - b) blood cell.
  - c) human being.
  - d) mosquito.
  - e) human hand.
- 7) An infected female mosquito bites a human, injecting saliva that contains *Plasmodium* \_\_\_\_\_.
  - a) merozoites.
  - b) sporozoites.
  - c) gametozoites.
  - d) spermatozoites.
  - e) zygozoites.
- 8) *Euglena* shape is maintained by \_\_\_\_\_.
  - a) cell membrane.
  - b) chloroplast.
  - c) flagellum.
  - d) chlorophyll.
  - e) pellicle.
- 9) Cnidarians are diploblastic; with two layers \_\_\_\_\_.
  - a) epidermis and gastrodermis, with tentacles.
  - b) epidermis and gastrovascular, with mesoglea.
  - c) endodermis and gastrodermis, with mesoglea.
  - d) endodermis and exodermis, with mesoglea.
  - e) epidermis and gastrodermis, with mesoglea.
- 10) A female \_\_\_\_\_ mosquito is responsible for transmitting malaria in humans.
  - a) *Trypanosoma*
  - b) *Plasmodium*
  - c) *Paramecium*
  - d) *Anopheles*
  - e) *Taenia*
- 11) Nematodes (roundworms) possess a cavity called as pseudocoel that is derived from the \_\_\_\_\_ of the embryo and represents persistent \_\_\_\_\_.
  - a) blastocoel; acoelomate.

- b) blastocoel; pseudocoelom.  
 c) blastocoel; coelom  
 d) blastocoel; blastocoel  
 e) blastocoel; eucoelomate.
- 12) Eucoelomate bilateral animals possess a true coelom lined with \_\_\_\_\_  
 a) endoderm  
 b) mesentery  
 c) mesodermal organ  
 d) mesodermal peritoneum  
 e) Mesoderm
- 13) The \_\_\_\_\_ first invade \_\_\_\_\_ and asexually reproduce to produce huge numbers of \_\_\_\_\_ which spread to \_\_\_\_\_ where more \_\_\_\_\_ are produced through more asexual reproduction.  
 a) sporozoites; red blood cells; merozoites; liver cells; merozoites  
 b) merozoites; liver cells; sporozoites; red blood cells; merozoites  
 c) merozoites; liver cells; merozoites; red blood cells; sporozoites  
 d) merozoites; red blood cells; merozoites; liver cells; sporozoites  
 e) sporozoites; liver cells; merozoites; red blood cells; merozoites
- 14) In Sporozoan cycle; infected red blood cells burst, releasing \_\_\_\_\_ that infect other red blood cells.  
 a) sporozoites  
 b) spores  
 c) ookinities  
 d) gametocytes  
 e) merozoites
- 15) Classification of the Phylum Cnidaria includes:  
 a) Anthozoa, Scyphozoa, Hydrozoa, Cubozoa  
 b) Anthozoa, Scyphozoa, Hydra, Cubozoa  
 c) Anthozoa, Hexacorallia, Hydrozoa, Cubozoa  
 d) Anthozoa, Ceriantipatharia, Hydrozoa, Cubozoa
- e) Anthozoa, Octocorallia, Hydrozoa, Cubozoa
- 16) Mandibles in arthropods refer to \_\_\_\_\_  
 a) hunting mouthparts  
 b) different mouthparts  
 c) chewing mouthparts  
 d) invertebrate mouthparts  
 e) proboscis mouthparts
- 17) Class \_\_\_\_\_ are the true jelly fish.  
 a) Hydrozoa  
 b) Anthozoa  
 c) Scyphozoa  
 d) Cubozoa  
 e) Octocorallia
- 18) Many Platyhelminthes have large ocelli which acts as \_\_\_\_\_  
 a) prey sensing organs.  
 b) taste sensing organs.  
 c) light sensing organs.  
 d) touch sensing organs.  
 e) sight sensing organs.
- 19) The mouth of nematodes are equipped with piercing organs called \_\_\_\_\_  
 a) scolex.  
 b) phasmids.  
 c) stylets.  
 d) aphasmids.  
 e) proglottids.
- 20) Nematodes are:  
 a) Bilateral, cephalised (though not much) and triploblastic.  
 b) Bilateral, cephalised (though not much) and diploblastic.  
 c) Asymmetrical, cephalised (though not much) and triploblastic.  
 d) Radial symmetrical, cephalised (though not much) and triploblastic.  
 e) Bilateral, cephalised (though not much) and polyblastic.
- 21) All molluscs have a similar body plan with three main parts:  
 a) A muscular foot, a visceral organ and a mantle.

- b) A muscular shell, a visceral mass and a mantle.
- c) A muscular foot, a visceral mass and a pen.
- d) A muscular radula, a visceral mass and a mantle.
- e) A muscular foot, a visceral mass and a mantle.
- 22) Class Gastropoda include the following \_\_\_\_\_.
- a) snails, clams, sea slugs, sea butterflies.
- b) snails, mussels, sea slugs, sea butterflies.
- c) snails, oysters, sea slugs, sea butterflies.
- d) snails, slugs, sea slugs, sea butterflies.
- e) snails, scallops, sea slugs, sea butterflies.
- 23) Class Bivalvia includes \_\_\_\_\_
- a) clams, mussels, oysters, scallops.
- b) clams, mussels, oysters, slugs.
- c) clams, mussels, oysters, snails.
- d) clams, mussels, oysters, limpets.
- e) clams, mussels, oysters, whelks.
- 24) Subclass Coleoidea include; \_\_\_\_\_
- a) octopuses, squid and winkles.
- b) octopuses, squid and whelks.
- c) octopuses, squid and scallops.
- d) octopuses, squid and ammonites.
- e) octopuses, squid, and cuttlefish.
- 25) Trematoda are also known as \_\_\_\_\_
- a) monogenetic flukes.
- b) trematodic flukes.
- c) polygenetic flukes.
- d) digenetic flukes.
- e) trigenetic flukes.
- 26) Class Turbellaria includes the following Orders: \_\_\_\_\_
- a) Cestoda, Tricladida and Polycladida.
- b) Acoela, Tricladida and Polycladida.
- c) Trematoda, Tricladida and Polycladida.
- d) Platyhelminthes, Tricladida and Polycladida.
- e) Monogenea, Tricladida and Polycladida.
- 27) Insects have \_\_\_\_\_
- a) 3 pairs of legs, 1 pair of antennae and 3 body regions.
- b) 3 pairs of legs, no antennae and 3 body regions.
- c) 3 pairs of legs, 2 pairs of antennae and 3 body regions.
- d) 3 pairs of legs, no antennae and 2 body regions.
- e) 3 pairs of legs, 1 pair of antennae and 3 body regions.
- 28) Class Hirudinea are usually \_\_\_\_\_
- a) oligoecious.
- b) acoloecious.
- c) polyecious.
- d) dioecious.
- e) monoecious.
- 29) Chelicerates(Subphylum Chelicerata) include \_\_\_\_\_
- a) Spiders, bugs and scorpions.
- b) Spiders, flea and scorpions.
- c) Spiders, ticks and crayfish.
- d) Spiders, ticks and crabs.
- e) Spiders, ticks and scorpions.
- 30) In Class Hirudinea, each metamere consists of several \_\_\_\_\_
- a) ocelli.
- b) proglottids.
- c) septa.
- d) annuli.
- e) suckers.
- 31) Flies and mosquitoes belong to Order \_\_\_\_\_
- a) Orthoptera.
- b) Diptera.
- c) Coleoptera.
- d) Hymenoptera.
- e) Lepidoptera.
- 32) Millipedes have \_\_\_\_\_ pair of legs per segment.
- a) 1

- b) 2  
c) 3  
d) no  
e) several
- 33) Class Polyplacophora use \_\_\_\_\_  
to scrape algae off rocks \_\_\_\_\_  
a) parapodia  
b) teeth  
c) radula  
d) septa  
e) tentacles
- 34) Class Oligochaeta are usually \_\_\_\_\_  
a) oligoecious.  
b) acoloecious.  
c) polyecious.  
d) dioecious.  
e) monoecious.
- 35) Arachnids include the following examples \_\_\_\_\_  
a) spiders, scorpions, mites and fleas.  
b) spiders, scorpions, mites and bugs.  
c) spiders, scorpions, mites and copepods.  
d) spiders, scorpions, mites and ticks.  
e) spiders, scorpions, mites and crabs.
- 36) Do tapeworms have a digestive tract?  
a) Yes  
b) Maybe  
c) I don't know  
d) No  
e) I'm not sure
- 37) Classification of Phylum Annelida includes the following classes \_\_\_\_\_  
a) Polychaeta, Oligochaeta and Cestoda.  
b) Polychaeta, Oligochaeta and Hirudinea.  
c) Polychaeta, Oligochaeta and Bivalvia.  
d) Polychaeta, Oligochaeta and Cephalopoda.  
e) Polychaeta, Oligochaeta and Gastropoda
- 38) One of the major groups of Gastropods, the Subclass Prosobranchia is a very large diverse group including \_\_\_\_\_.  
a) limpets, snails and whelks.  
b) limpets, winkles and sea slugs.  
c) limpets, winkles and whelks.  
d) limpets, winkles and mussels.  
e) limpets, oysters and whelks.
- 39) Class Ophiuroidea include the following \_\_\_\_\_  
a) brittle stars and sea lilies.  
b) brittle stars and basket stars.  
c) brittle stars and sea stars.  
d) brittle stars and sea urchins.  
e) brittle stars and sea cucumbers.
- 40) \_\_\_\_\_ is the fusion and specialization of formerly metameric segments.  
a) Diffusion  
b) Tagmatisation  
c) Cephalisation  
d) Fertilisation  
e) Metamerism
- 41) Class Polychaeta are all \_\_\_\_\_  
a) marine.  
b) terrestrial.  
c) parasitic.  
d) estuarine.  
e) brackish.
- 42) Pearls are formed in \_\_\_\_\_ and \_\_\_\_\_  
a) oysters and snails.  
b) snails and clams.  
c) slugs and clams.  
d) oysters and slugs.  
e) oysters and clams.
- 43) In Mollusca, some \_\_\_\_\_ and \_\_\_\_\_ inhabit freshwater.  
a) gastropods and cephalopods  
b) cephalopods and bivalves  
c) gastropods and bivalves  
d) gastropods and polyplacophora  
e) polyplacophora and bivalves
- 44) Which Class employs some of these defense strategies: tubes to hide in,

- vicious jaws and modified “stinging” setae?
- Class Polychaeta
  - Class Cestoda
  - Class Hirudinea
  - Class Oligochaeta
  - Class Gastropoda
- 45) Class Hirudinea usually has a fixed number \_\_\_\_\_ of segments.
- (32)
  - (33)
  - (34)
  - (35)
  - (36)
- 46) This specialized digestive system including; typhlosole, gizzard and crop is found only in Class \_\_\_\_\_
- Polychaeta
  - Cestoda
  - Hirudinea
  - Oligochaeta
  - Cephalopoda
- 47) In Polychaetes, the \_\_\_\_\_ function in gas exchange, locomotion and feeding.
- appendages
  - epitoky
  - septa
  - annuli
  - parapodia
- 48) Class \_\_\_\_\_ **does not** have septa between metameres.
- Polychaeta
  - Cestoda
  - Hirudinea
  - Oligochaeta
  - Ceaphalopoda
- 49) The \_\_\_\_\_ is a rasping, protrusible feeding structure found in most molluscs, but not bivalves.
- muscular foot
  - pen
  - radula
  - mantle
  - visceral mass
- 50) \_\_\_\_\_ belong to Subclass Coleoidea with eight arms and have no shell.
- Decapods
  - Octopods
  - Nautiloids
  - Ammonites
  - Cuttlefish
- 51) Which of the following is characteristic of chordates?
- dorsal, hollow nerve cord.
  - notochord.
  - pharyngeal gill slits
  - b and c.
  - all of the above.
- 52) The condition featuring in the development found in reptiles, where egg fluid is protected in a hard shell is referred to as
- sessile.
  - anamniota.
  - anaspida
  - amniota.
  - diaspida.
- 53) Identify which Class(es) of the Subphylum Vertebrata have cartilaginous representatives:
- Amphibian.
  - Chondrichthyes.
  - Agnatha
  - Osteichthys.
  - All of the above.
- 54) Lobed fins are \_\_\_\_\_.
- Also known as claspers in sharks
  - Found in teleosts.
  - shared characteristics between the crossopterygians and lungfishes
  - used by marine iguanas for swimming underwater.
  - ventrally-placed fenestra in each side of the cheek in reptiles.
- 55) The common (or “stem”) ancestor of all recent reptiles belongs to the
- Squamata.
  - Crocodylia.
  - Cotylosaurs

- d) Anapsida.  
e) Gymnophiona.
- 56) Which of the following is not a characteristic of the class Amphibia?  
a) Production of an anamniotic egg.  
b) notochord absent in adults.  
c) well-developed lungs  
d) non-moveable eyelids.  
e) toes with or without nails.
- 57) Acorn worms \_\_\_\_\_  
a) are classified in the phylum Chordata.  
b) live and swim in the pelagic zone.  
c) are mainly deposit feeders  
d) have larvae that are similar to fish.  
e) all of the above.
- 58) Urochordates \_\_\_\_\_  
a) are terrestrial organisms.  
b) have functional jaws.  
c) have tadpole larvae  
d) have incurrent and excurrent siphons for filter feeding.  
e) only c & d.
- 59) Lancelets \_\_\_\_\_  
a) are sharp.  
b) are also called tunicates.  
c) are fish-like filter feeding animals that lack a backbone  
d) live in the sea as adults but migrate up rivers to breed.  
e) descend from the sharks and rays.
- 60) Cephalochordates \_\_\_\_\_  
a) Attach to rocks where they filter feed using tentacles.  
b) have a sessile stage as adults and a free-swimming stage as juveniles.  
c) lack an anus  
d) are typically found near hydrothermal vents.  
e) none of the above.
- 61) *Hagfish* are examples of \_\_\_\_\_.  
a) jawed fishes.  
b) an extinct assemblage of fish.  
c) jawless fishes  
d) bony fishes.
- e) fishes ground up and used for 'Petro' or fuel in Scandinavia.
- 62) The operculum \_\_\_\_\_.  
a) encloses the gills of cartilaginous fishes.  
b) helps the muscles of the caudal (tail) fin to contract  
c) is a hard, flat structure that protects the gills of bony fishes  
d) is a bone used to detect sensitive sounds in the water column  
e) none of the above.
- 63) Skates and rays \_\_\_\_\_  
a) are freshwater species  
b) feed on phytoplankton  
c) are oviparous and ovoviviparous (produce "live" young)  
d) are members of Osteichthyes  
e) none of the above.
- 64) Which of the following is not a characteristic of the Class Reptilia?  
a) they are endothermic  
b) they have scaly skin  
c) they have well developed lungs  
d) they eat algae, invertebrates, and fish  
e) none of the above.
- 65) Which of the following is not true of turtles?  
a) their shell has two parts: a plastron and carapace  
b) their sex can be determined by examining the plastron and the location of the anus  
c) their shells consists of scutes (plates)  
d) they use gills for breathing  
e) they migrate from feeding to mating grounds.
- 66) The spiral valve is a specialized structure found within \_\_\_\_\_.  
a) bony fishes  
b) sharks and rays  
c) sea turtles  
d) lampreys  
e) sea birds.

- 67) A bony fish that lives in the marine environment that was once thought to be extinct is the:
- coelacanth
  - African lung fish
  - sturgeon fish
  - mud skipper
  - puffer fish.
- 68) Tails that have equally sized upper and lower lobes are called:
- heterocercal
  - ganoid
  - cycloid
  - homocercal
  - Ctenoid.
- 69) Turtles and Tortoises belong to the ORDER
- Squamata
  - Crocodylia
  - Testudines
  - Rynchocephalia
  - Tortoiidae.
- 70) What vertebrate group has the hip girdle located inside of the ribcage?
- Frogs
  - Snakes
  - Sharks
  - Chimeras
  - Turtles.
- 71) Which of the following phrases best describes the order of sequence in amphibian digestive tract?
- mouth > esophagus > stomach > small intestines > large intestine > cloaca
  - mouth > esophagus > stomach > small intestines > cloaca
  - mouth > esophagus > stomach > large intestine > cloaca
  - mouth > esophagus > stomach > small intestines > large intestine
  - None of the above.
- 72) Which of the following phrases best describes the heart of the typical amphibian?
- branchial heart
  - 2-chamber heart
  - 3-chamber heart
  - 4-chamber heart
  - none of the above.
- 73) Disadvantage(s) for amphibians living on land.
- Water is needed for the external fertilization.
  - Amphibians have to lay eggs in water.
  - Amphibians have moist skin.
  - Amphibian have jelly-like eggs.
  - All of the above.
- 74) All reptiles are
- Poikilothermic and Amniotic
  - Homiothermic and Amniotic
  - Poikilothermic and Amniotic
  - Homiothermic and Anamniotic
  - None of the above.
- 75) The poison glands of poisonous snakes are modified
- Buccal glands
  - Salivary glands
  - Palative glands
  - Excretory glands
  - a and c.
- 76) What were the names of the two earliest known birds
- Archaeopteryx and Velociraptor
  - Potarchaeopteryx and Xiaotingia
  - Archaeopteryx and Xiaotingia
  - Potarchaeopteryx and Archaeopteryx
  - Xiaotingia and Velociraptor
- 77) Which of these is not a unique characteristic of Birds?
- They possess teeth
  - Possess pneumatized bones
  - Possession of feathers
  - Their forelimbs are specialized for flight
  - They have highly centralized body mass

- 78) In birds the nitrogenous waste products of metabolism are eliminated in the form of
- Ammonia
  - Urea
  - Uric acid
  - ammonia and Urea
  - peptides
- 79) The stomach of birds includes the \_\_\_\_\_, a structure particularly adapted for grinding food
- Jejunum
  - Ileum
  - Proventriculus
  - Gizzard
  - Crop
- 80) Stenophagous means
- Wide eating or omnivorous.
  - Narrow eating or specialized.
  - The regurgitation of food for chicks
  - The storage process of grinding food in birds stomachs.
  - The storage of food in the crop.
- 81) The body temperature derived from animal's own metabolism is termed as?
- Poikilothermy
  - Endothermy
  - Homeostasis
  - Homeothermy
  - None of the above
- 82) Birds have pneumatized bones, this means the bones are
- Laced with cavities
  - Fused together
  - Solid
  - Constantly growing
  - Shrinking
- 83) Which muscle lowers the wing during flight in birds
- Pectoralis
  - Triceps
  - Biceps
  - Supracoracoideus
  - Forearm
- 84) The Birds that are capable of flying are known as \_\_\_\_\_
- Neognathous
  - Paleognathous
  - Kiwi
  - None of the above
  - All of the above
- 85) The single middle ear bone found in birds is called the
- columella
  - incus
  - stapes
  - malleus
  - None of the above
- 86) What characteristic groups birds with reptiles
- Single occipital condyle
  - Two occipital condyles
  - Lower jaw composed entirely of a dentary bone
  - Integument modified into various glands
  - Middle ear with three ossicles
- 87) What distinctive feature in the eye of birds provides nutrients and oxygen to the eye
- lens
  - Sclerotic ring
  - choroid
  - pecten
  - fovea
- 88) When a birds eyes are positioned forward, it allows
- Better wide vision.
  - Better vision when high in the sky.
  - The distinction between colours
  - Good night vision.
  - Better depth perception.
- 89) The mammalian skull may be characterized as \_\_\_\_\_
- Anapsid
  - Diapsid
  - Biaspid
  - Synapsid
  - Monoapsid

- 90) Unlike reptiles, the first mammals were characterized by \_\_\_\_
- Continuously replaced teeth
  - Only one set of teeth during the lifetime
  - Two sets of teeth during the lifetime
  - Continuously growing teeth
  - Identical teeth
- 91) What are the names of the bones in the middle ear in mammals?
- Quadrata, incus, columella
  - Quadrata, incus, stapes
  - Malleus, incus, columella
  - Malleus, incus, stapes
  - None of the above
- 92) The skull in Mammals consist of \_\_\_\_\_ occipital condyles
- One
  - Two
  - Three
  - Five
  - None
- 93) Mammals, like birds have three fetal membranes, these are the
- Amnion, chorion, allantois.
  - Amnion, cloaca, allantois.
  - Pinnae, cloaca, allantois
  - Pinnae, chorion, malleus.
  - Amnion, chorion, malleus.
- 94) True horns are
- The same as antlers.
  - Restricted to males.
  - Not shed
  - Usually branched.
  - Seasonal and not continuously grown.
- 95) Piscivory refers to the act of feeding on
- Meat
  - Fish
  - Grass
  - Blood
  - Feces
- 96) The integument bears many glands; the mammary glands fulfil what function?
- Lubrication
  - Communication
  - Thermoregulation
  - Milk production
  - fertilization
- 97) The integument of mammals consists of Sweat gland, Mammary gland, Scent and Sebaceous gland
- True
  - False
  - Partly true
  - Uncertain
  - None of the above
- 98) Bats are the only mammals adapted to \_\_\_\_\_
- Running
  - Walking
  - Flying
  - Climbing
  - Swimming
- 99) Most female mammals are sexually receptive only during
- Diapause
  - Estrus
  - Gestation
  - Parturition
  - All of the above
- 100) How many infraclasses is the Subclass Theria made up of?
- 1.
  - 2.
  - 3
  - 4.
  - 5.

**[100 MARKS]**