



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

**SCHOOL OF NATURAL AND APPLIED SCIENCES
DEPARTMENT OF BIOLOGY, CHEMISTRY AND PHYSICS**

QUALIFICATION: BACHELOR OF SCIENCE	
QUALIFICATION CODE: 07BOSC	LEVEL: 6
COURSE CODE: EBD601S	COURSE NAME: EVOLUTION AND BIOLOGICAL DIVERSITY
SESSION: JULY 2022	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
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<p style="text-align: center;">INSTRUCTIONS</p> <ol style="list-style-type: none">1. Answer ALL the questions2. Write clearly and neatly3. Number the answers clearly4. All written work MUST be done in blue or black ink5. No books, notes and other additional aids are allowed6. Draw diagrams wherever necessary

PERMISSIBLE MATERIALS

None

THIS QUESTION PAPER CONSISTS OF 6 PAGES
(Including this front page)

SECTION 1: MULTIPLE CHOICE QUESTIONS

[10]

- There are 10 multiple choice questions in this section. Each question carries 1 mark.
- Answer **ALL** questions by selecting the **LETTER** with the correct answer.

- 1.1 The class of cnidarians in which the medusa and polyp both are found in one animal is;
- Anthozoa
 - Hydrozoa
 - Scyphozoa
 - None of the above
- 1.2 The rotifers reproduce sexually and asexually by _____ eggs.
- Parthenogenic
 - Monoecious
 - Diploid
 - Dioecious
- 1.3 Hookworms normally reach the human intestine after they;
- Are ingested as cysts in contaminated meat
 - Bore directly from the skin of the abdomen to the intestine
 - Enter the host's anus and migrate to the intestine
 - Travel through the blood to the lungs and throat and are then swallowed
- 1.4 Identify the structures labelled a & c in the figure 1 of an amniote egg in reptile as shown below.

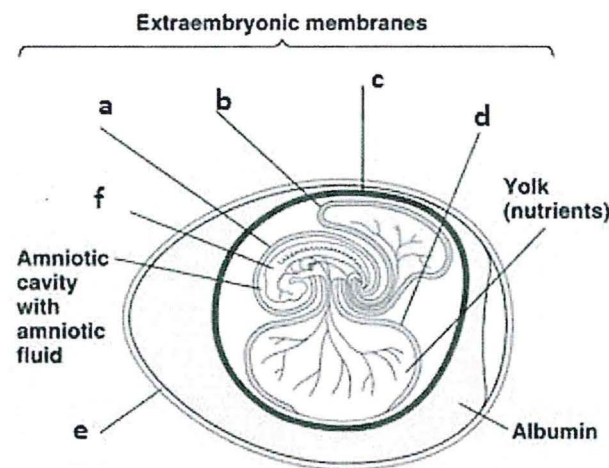


Figure 1

- chorion ; yolk sac
- yolk sac ; allantois
- chorion ; amnion
- allantois ; amnion

- 1.5 Bivalves have all of the following structures except;
- a) A radula
 - b) Adductor muscles
 - c) Siphon
 - d) Gills
- 1.6 The heart of a mammal;
- a) Contains two chambers, like the heart of a bird
 - b) Contains four chambers, like the heart of an amphibian
 - c) Has two completely separate ventricles
 - d) Allows deoxygenated blood to mix with oxygenated blood
- 1.7 Which of the following pairs is most closely related?
- a) Snake & lizard
 - b) Crocodile & tuatara
 - c) Alligator & komodo dragon
 - d) Alligator & alligator snapping turtle
- 1.8 The direction that air flows when a frog breathes is controlled by the;
- a) Tympanic membrane
 - b) Floor of the mouth
 - c) Nostrils
 - d) Lungs
- 1.9 What is the subphylum of lancelets?
- a) Urochordata
 - b) Cephalochordata
 - c) Vertebrata
 - d) None
- 1.10 Which of the following organs is NOT present in birds?
- a) Crop
 - b) Cloaca
 - c) Intestine
 - d) Urinary bladder

QUESTION 2: DEFINE THE FOLLOWING TERMS

[3]

Each answer carries one mark.

- 2.1 Tagma
- 2.2 Setae
- 2.3 Umbo

QUESTION 3: DISTINGUISH BETWEEN THE PAIRS OF THE FOLLOWING TERMS [6]

- 3.1 Cnidocyte; colloblast (2)
- 3.2 Incurrent siphon; excurrent siphon (2)
- 3.3 Tortoise; Turtles (2)

QUESTION 4: FILL IN THE BLANK [7]

- 4.1 Brittle stars are in the class _____ and have slender _____ that easily break off to escape predators. (2)
- 4.2 Metamorphosis in Amphibians is controlled by a hormone called _____. (1)
- 4.3 A _____ feather gives shape to a bird's body and helps a bird balance and steer during flight. (1)
- 4.4 The rotifers reproduce sexually and asexually by _____ eggs. (1)
- 4.5 Urochordates are marine, sessile, _____ feeding invertebrate chordates. Common example is _____. (2)

QUESTION 5: ONE-WORD ANSWERS [8]

Each answer carries one mark.

- 5.1 Which specialized cell that carries the food to all other parts of the sponge.
- 5.2 Which phylum is commonly called roundworms or pinworms?
- 5.3 Name the mollusks without a shell.
- 5.4 Name the organs of locomotion in Echinodermata are called?
- 5.5 Name the intermediate host for a fluke.
- 5.6 Which is the 'bony' fish class?
- 5.7 Which membrane that acts like an eardrum detecting sound for amphibians?
- 5.8 How many cell layers do the bodies of Ctenophores usually have?

QUESTION 6: SHORT QUESTIONS

[23]

- 6.1 Identify the structures in the diagram below in figure 2 and name that worm. (2)



Figure 2

- 6.2 What opens and closes bivalve shells? (2)
- 6.3 What is the "lip" called and what is its function in earthworm? (2)
- 6.4 Name to the two parts of stomach system in Bird. (2)
- 6.5 Name the parts of the nematode male reproductive system? (2)
- 6.6 Give 2 defense mechanisms used by octopi. (2)
- 6.7 Write a short note on the excretory system of earthworm. (2)
- 6.8 Name the reptiles which have four-chambered heart. (2)
- 6.9 What are the two substances that a sponge's skeleton may be made of? How do these substances differ? (3)
- 6.10 In tabular form, mention the difference between the frog and toad. (4)

QUESTION 7: LONGER QUESTIONS

[26]

- 7.1 What are the distinguishing characteristics of platypus. (5)
- 7.2 Name the 5 classes of echinoderms with one example each. (5)
- 7.3 Tabulate the main differences between shark and ray fish. (5)
- 7.4 What are six main features of phylum Cnidarian? (6)
- 7.5 In a tabular column form differentiated between Platyhelminthes and Nematode. (5)

QUESTION 8: SKETCH AND LABEL THE STRUCTURE

[17]

- 8.1 Sketch the structure of spiders and label its parts. (7)
- 8.2 Sketch the flow chart of Phylum Chordata classification with example. (10)

THE END