



**INVERTEBRATE PALEONTOLOGY
(G- 215)**

Name: _____
St. Number: _____

Date: 23.6.99
Duration: 2 hours

**Part I
(65 marks)**

Choose **7 QUESTIONS ONLY**. Be brief and clear, sketch if necessary, for illustration.

1. Write a brief account on the evolution of the Ammonites.
2. Define 5 indicators which can be used to distinguish the posterior side of a Bivalve shell. Based on this explain how it is possible to recognize the right and left valves.
3. (A) Draw a Trilobite illustrating all its morphological features.
(B) Explain the stratigraphical importance of the Trilobites.
4. Argue the concept that the Ammonitic heteromorphs are overspecialized end forms.
5. Draw the Bivalve dentition that is represented by the following formula.

$$\begin{array}{ccccccccccc} \text{IIIA} & _ & \text{IA} & & 3\text{a} & _ & 1 & _ & 3\text{b} & _ & 5\text{b} & & \text{IP} & _ & \text{IIIP} \\ \hline _ & & \text{IIA} & _ & _ & & 4\text{a} & _ & 4\text{b} & _ & 6\text{b} & _ & _ & & \text{IIP} & _ \end{array}$$

6. (A) Sketch the various stages of development of septa (until the secondary metasepta) during the growth of the genus Zaphrentes. Don't forget the name of septa
(B) sketch and define the various forms of the Tabulata
7. Give a proper numbering of the plates of an oriented Regular Echinoid. How many zones of columns of plates emerge from these plates? Explain the state of consistency of the columns' number throughout the geological history of the Echinoids.
8. Draw and label
(A) Eight morphological features of a Gastropoda shell.
(B) Two morphological features of a Graptolite fossil.



PART II
Fill in the Blanks
(10 marks)

Fill in the appropriate term. Two terms will not count.

1. The _____ is a longitudinal depression, median in position, concave in transverse profile and radial from the Brachiopod umbo.
2. The projection of the ventral sides of the body chamber of the Ammonite shell is called _____.
3. The _____ is a raised rounded Echinoid tubercle on which the spine articulates.
4. The Brachiopod shell whose posterior margin of hingement does not coincide with the hinge axis is said to be _____.
5. The anterior spoon-like prolongation of the dorsal border of the phragmocone which protects the Belemnite animal mass is called _____.
6. The _____ is the median triangular opening in the brachial valve of a Brachiopod which lies directly below the beak.
7. A pair of symmetrical plates usually close the body chamber of Ammonoid conchs and interpreted as similar to an operculum of Gastropods are called _____.
8. The _____ is loop-like internal skeletal part which supports the lophophore of Brachiopods.
9. The _____ is a small domed calcareous plate occurring between the radiating septa in the peripheral region of a corallite.
10. The polar region around the mouth on the adoral side of the Echinoid is said to be the _____.

Part III
PRACTICAL Part
(25 marks)

Provided with 25 specimens, please identify the marked 20 then, afterwards draw and label the morphological features of the other 5 specimens.

GOOD LUCK