



FACULTY OF SCIENCE

DEPARTMENT OF BIOTECHNOLOGY
NATIONAL DIPLOMA IN BIOTECHNOLOGY OR FOOD TECHNOLOGY

MODULE ZOO1AE2
 BIODIVERSITY EXTENDED 1

CAMPUS DFC

NOVEMBER FINAL ASSESSMENT

DATE NOV 2014

SESSION 14:00 – 16:00

ASSESSOR(S)

DR N NIEMANN

INTERNAL MODERATOR

MR E VAN ZYL

DURATION 2 HOURS

MARKS 120

SURNAME AND INITIALS: _____

STUDENT NUMBER: _____

CONTACT NR: _____

NUMBER OF PAGES: 8 PAGES

INSTRUCTIONS: ANSWER ALL THE QUESTIONS

REQUIREMENTS: MCQ CARD
ONE ANSWER SCRIPT PER STUDENT

QUESTION 1

Choose the most appropriate answer:

(20)
[20]**QUESTION 2**

Match column B to column A:

(10)

Column A	Column B
2.1. Mesosomes	A. Mechanical surface attachments between cells
2.2. Plasmodesmata	B. Single points of attachment between adjacent cells that connects their cytoskeletons
2.3. Cell recognition proteins	C. Shaped so that specific molecules (such as hormones) can bind to them
2.4. Receptor proteins	D. Animals whose blastopore becomes the anus
2.5. Anchoring junctions	E. Member of Cnidaria with a vase-shaped body plan where the mouth is directed upwards
2.6. Desmosomes	F. Infoldings of the plasma membrane found in some prokaryotes
2.7. Deuterostomes	G. Glycoproteins that stop the body's immune system from attacking its own cells
2.8. Protostomes	H. Animals whose blastopore becomes the mouth
2.9. Polyp	I. Channels in a cell wall that allow cytoplasmic strands to extend between adjacent cells
2.10. Medusa	J. Member of Cnidaria with a bell-shaped body plan where the mouth faces downward

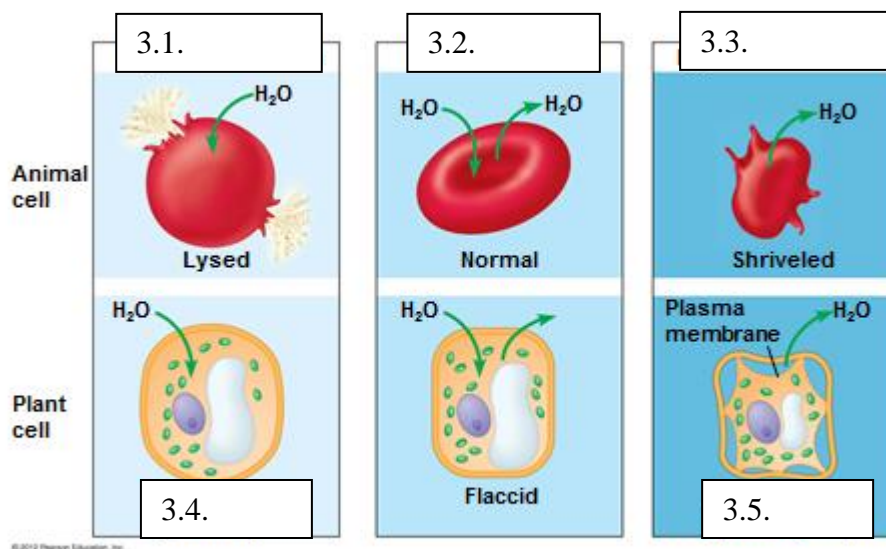
[10]

QUESTION 3

Provide the missing labels:

(15)

Figure 5.5



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Figure 8.4

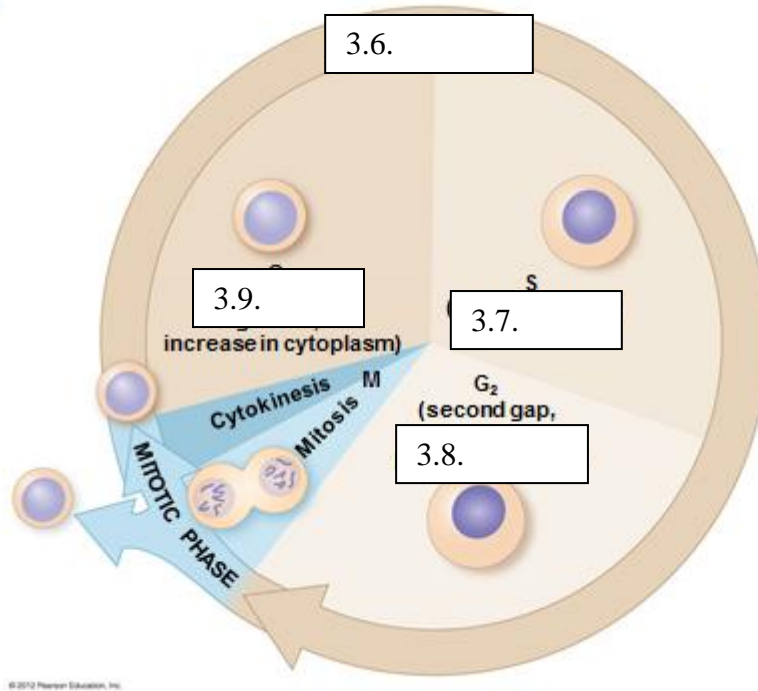
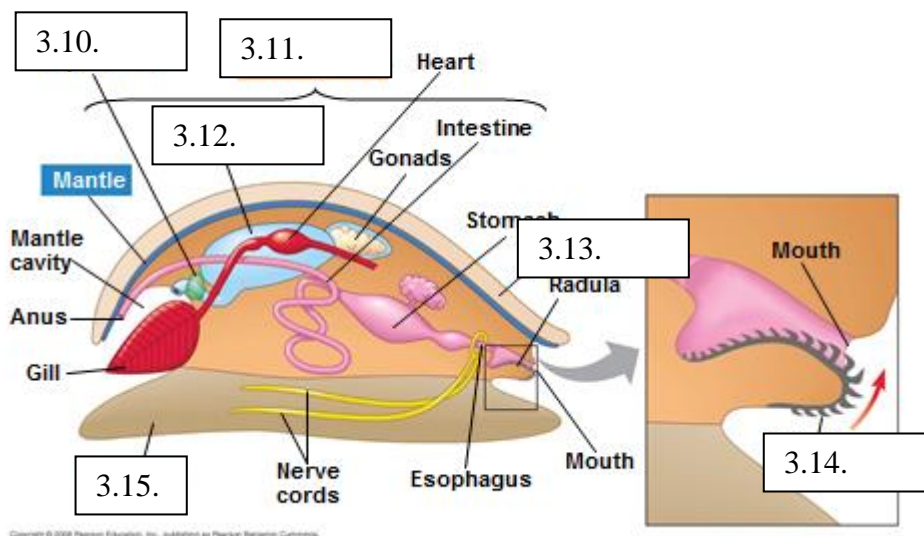


Fig. 33-15



[15]

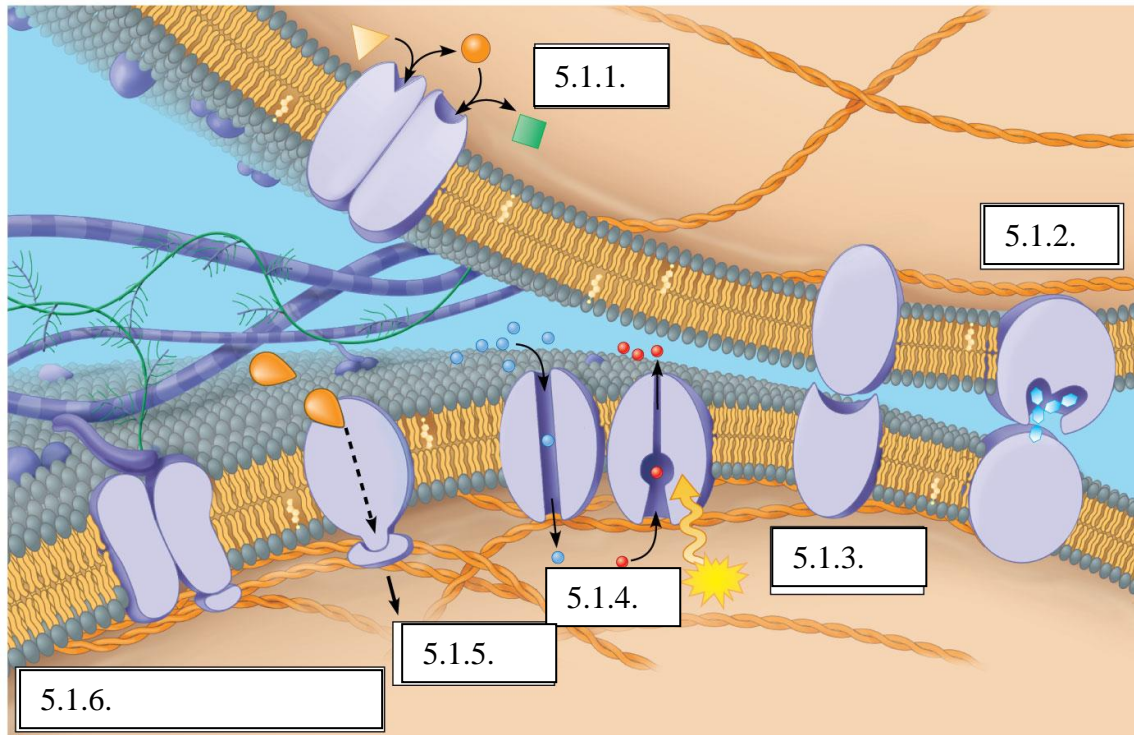
QUESTION 4

- 4.1. Draw and label a chloroplast. (5)
- 4.2. List three types of fibers that make up the cytoskeleton of a cell and give two functions of each. (9)
- 4.3. List the four functions that all eukaryotic cell organelles can be classified under. (4)

[18]

QUESTION 5

- 5.1. Identify the functions of membrane proteins based on the figure below. (6)



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5.2. Explain what cofactors are.

(7)
[13]

QUESTION 6

- 6.1. List four factors that determine the rate of cell division. (4)
- 6.2. Answer the following questions about Trisomy 21:
- 6.2.1. Describe what Trisomy 21 is. (3)
- 6.2.2. Identify the disease associated with Trisomy 21. (1)
- 6.2.3. Identify the event that causes Trisomy 21. (1)
- 6.2.4. Identify the parent that contributes to Trisomy 21 and which factor is strongest associated with the parent being at risk of causing it. (2)
- [11]

QUESTION 7

- 7.1. List 7 characteristics that members of the animal kingdom have in common. (7)
- [7]

QUESTION 8

- 8.1. Select five characteristics found in members of the *Ctenophora*. Only write down the letters of the characteristics. (5)
- A. They are diploblasts.
 - B. They are triploblasts.
 - C. They have bright colours.
 - D. They are transparent.
 - E. They are often bioluminescent.
 - F. They don't have a body plan.
 - G. They have 8 plates of fused cilia.
 - H. They have mesoglea.

I. They have spicules.

J. They have cnidocytes

K. They have flagella.

8.2. List four organ systems that can be found in earthworms.

(4)

8.3. Describe how arthropods can grow and undergo metamorphosis.

(5)

8.4. List three differences between millipedes and centipedes.

(3)

8.5. Describe sea cucumbers.

(5)

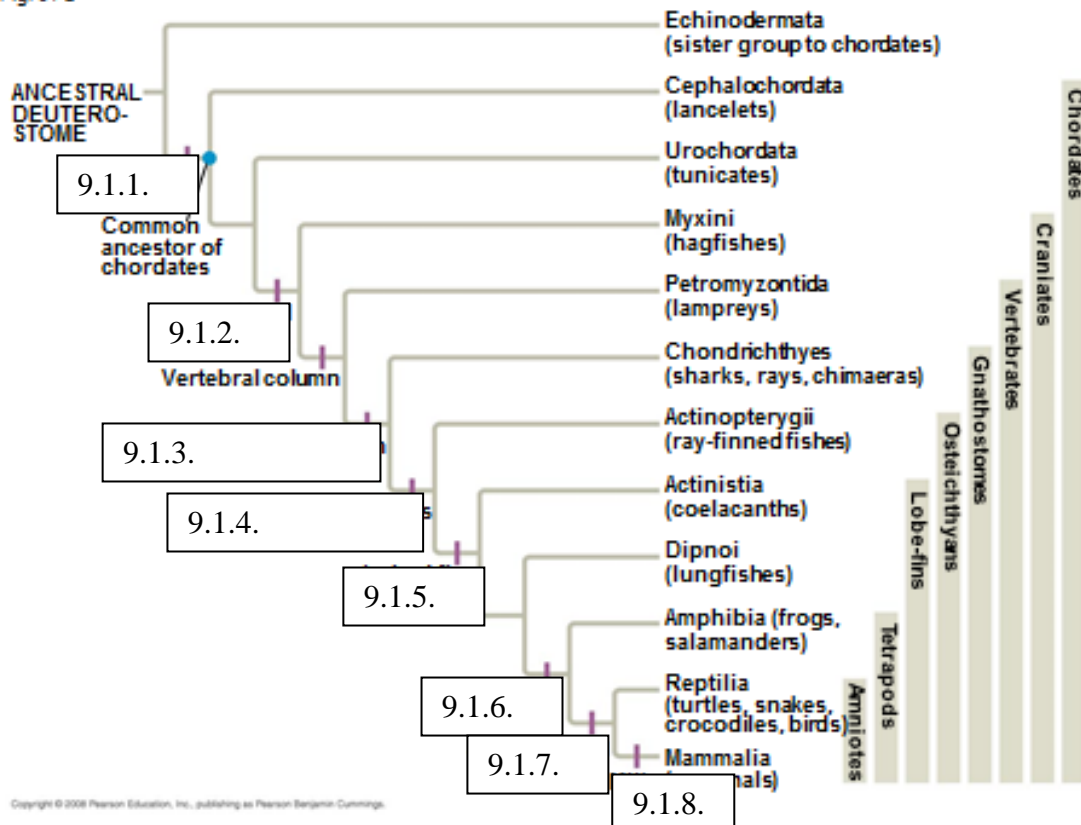
[22]

QUESTION 9

9.1. Identify the evolutionary change that separates the classes from the previous ones in the following dendrogram:

(8)

Fig. 34-2



9.2. Describe the characteristics that all sharks have in common.

(6)

[14]

TOTAL:

120