
	Final Exam:	May Season	Course Code:	A77	Percentage of Degree%:	60 %	
	Academic Year:	2017/2018	Program Name:	Master	The number of exam bulletin:	2	
	Semester:	Scnd	Department:	Elective course	Date of Exam:	/5 /2018	
	Course title:	Developmental biology A77	Degree	60	Time of Exam:	3 hours	

Exam instructions:

1. Answer questions only prescribed others will not be considered excess to questions.
2. Use only blue pen and pencil on answer sheet.
3. Disposal of paper and one for each student.
4. Trading instruments is not allowed (pens, ruler, calculators, etc.).
5. Mobiles, smart phones, taps, and calculator application on mobile phone are not allowed.

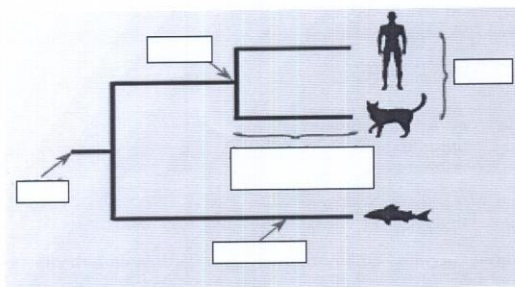
Answer the following Questions:

First question

Total score (30)

1- Discuss:

- A - How do cells know what they're supposed to do during development? Explaining the different Sources of information in development? **(5 points)**
- B- The two extensive groups of analyses exist to examine phylogenetic relationships? Mentioning the two important tools that have dramatically improved the study of phylogenetics? **(5 points)**
- 2- Write the missing indicators defining the: Maximum parsimony trees- Maximum likelihood- chemotaxonomy and Distance matrix? **(10 points)**





- 3- What are the typically major steps that a Molecular phylogenetic analysis consists of? **(5 points)**
- 4- Describe the Limitations of Molecular Systematics? **(5 points)**

3rd question:

Write briefly about the followings; draw if possible:

- A- Cell structure and the cytoskeleton? **(5 points)**
- B- The role of endo-membrane system in protein synthesis, modification, sorting and transportation? **(5 points)**
- C- Simple diffusion, facilitated diffusion and osmosis? **(5 points)**

Course Professor:	Prof. Dr. Omaima Khamiss	Course Coordinator:	Assoc.Prof. Dr. Osama Badr	
Examiners:	Prof. Dr. Omaima Khamiss	Assoc.Prof. Dr. Osama Badr	Head of Department:	Prof. Dr. Omaima Khamiss
Examination committee:	Prof. Dr. Omaima Khamiss	Assoc.Prof. Dr. Osama Badr	Assoc.Prof. Dr. Medhat Hashem	
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4th question:

(15 points)

Discuss in detail with drawing:

- A- Eukaryotic and prokaryotic cells, endosymbiosis theory and the differences between the mesosomes and mitochondria. (8points)
- B- The sodium – potassium pump as one of the direct active transport and problems of invading transportation and the types of transporters? (7 points)

----- Best wishes -----

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