Tanta University - Faculty of Science - Chemistry Department
"Supramolecular Chemistry"
Final Exam for Level four students
Sections: Chemistry, Chemistry/Biochemistry and Chemistry/Zoology
Date: 10/6/2015 Course Code: CH4218 Total assessment marks: 50 Time Allowed: 2h

Question (I) (16 Marks)

Answer the following: *(Illustrate your answer with figures).*

1- Explain why: Zwitterion hosts are better than Katapinand-like hosts for anion complexation.
2- Indicate the role of crown ether in the reaction of potassium fluoride with benzyl chloride in acetonitrile.
3- Explain the effect of chelate ring size on selectivity of cation complexation.
4- Compare between the cation affinity of the podand and their cyclic analogue.

Question (II) (10 Marks)

Complete the following:

1- Valinomycin is ..... selective for .....
2- Cyclodextrins consists of ..... units that are linked together by a ..... β-cyclodextrin: containing .....
3- Half protonated form of cryptand host is suitable for ..... Full protonated form is suitable for ..... Unprotonated form of cryptand host is suitable for .....
4- Weak-strength hydrogen bond occurs between .....
5- Transfer of insoluble MnO^{4-} ion into organic solvents by ..... results in quantitative oxidation of the organic substrates.

Question (III) (12 Marks)

Give a brief explanatory note on the following:

1- Self-assembly.
2- The kinetic and thermodynamic template effect.
3- Coordination polymers.

Question (IV) (12 Marks)

Put (√) in front of correct statement and (×) in front of wrong one and correct it:

1- An activation stage means that, the guest undergoes conformational readjustment in order to bind a host. It is energetically favorable. ( )
2- A host species with multiple binding sites that are covalently connected forms a more stable complex than multiple unidentate ligand. ( )
3- Hydrogen bond represents a special kind of ion–ion interaction. ( )
4- Cyclophane hosts include all organic molecules that containing a bridged amino group specific for cations. ( )
5- The role of the template is to enhance the rate of formation of the cyclic intermediate by stabilizing the cyclic product. ( )
6- Divalent cations bound strongly by hosts with large cavity. ( )

With My Best Whishes
Examiner: Prof. Dr. Dina M. Abd El-Aziz

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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR LEVEL FOURTH OF STUDENTS OF CHEMISTRY/BIOCHEMISTRY			
	COURSE TITLE:	CANCER BIOLOGY		COURSE CODE: BC4204
DATE:	6-6 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer all the following questions

I- Clarify diagrammatically each of the following **(36 marks)**

1- Survival (growth) factors activate cell cycle from G_1-S phase through cyclin and cyclin dependent kinase to inactivate retinoblastoma (Rb) protein. Mention at least 3types of growth factors **(12 marks)**

2- The mechanism of E_7 of human papilloma virus inactivate Rb protein **(4 marks)**

3- Absence of survival factors inactivate Bcl_2 and activate Bax to activate intrinsic pathway of apoptosis **(10 marks)**

4- Interleukin 2 expresses Fas ligands and extrinsic pathway of apoptosis by cytotoxic T-lymphocyte. **(10 marks)**

II- 1- Discusses by sketch and chemical structure the mechanism of formation of nitrosamine that is formed from 3 different types of food and cause mutation of ras protoncogene (loss of GTPase activity). **(14 marks)**

2- Compare between tumor specific antigen and tumor associated antigen with examples. **(8 marks)**

3-Clarify the totoumerization of deoxyadenosine by radiation cause mutation of key genes. It may be repair by mismatched repair; explain this repair **(10 marks)**

III- 1- Identify each of the following:

a- Malignant neoplasia b-Carcinoma in situ

c-Xeroderma Pigmentosum d- Error-prone Repair **(8 marks)**

2- Sketch only the chemical, radiation and viruses cause intiated cancer cells and proliferate to a malignant tumor **(8 marks)**

3-P53 act as guardian the genome, what happened if p53 is mutated **(8 marks)**

4-How proto-oncogene over-expressed and converts into oncogene? **(8 marks)**

Best Wishes

Prof. Ehab M.M. Ali