



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

④

لہذا کیوں

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 G₁-S phase through cyclin and cyclin dependent kinase to inactivate retinoblastoma (Rb) protein. Mention at least 3 types of growth factors (12 marks)
 - 2- The mechanism of E₇ of human papilloma virus inactivate Rb protein (4 marks)
 - 3- Absence of survival factors inactivate Bcl₂ 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 protooncogene (loss of GTPase activity). (14 marks)**
- 2- Compare between tumor specific antigen and tumor associated antigen with examples. (8 marks)
 - 3- Clarify the tautomerization 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 initiated 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**

