

علو مراد

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TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY

EXAMINATION for Seniors students (Fourth Year) students of Material science

1990	COURSE TITLE:	Applied Polymer Chemistry تطبيقات البوليمرات	COURSE CODE: CH4222
DATE:	MAY 25 TH 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100
			TIME ALLOWED: 2 HOURS

Answer the following questions:

- 1- Draw a comparison of release profiles for controlled release formulations with other methods of drug administration (therapeutic window). **10 marks**
- 2- Write notes on **Design of Controlled Release Systems** **10 marks**
- 3- **Diffusion-Controlled Controlled Release systems** **10 marks**
- 4- **write the chemical structure of Gutta-percha rubber** **10 marks**
- 5- **Classification of hydrogel** **10 marks**
- 6- **Chemical cross-linking as a Methods to produce hydrogel** **10 marks**
- 7- **The application of hydrogels for drug delivery** **10 marks**
- 8- **Ageing Agents as polymer additives** **10 marks**
- 9- **Two methods to produce hydrogel** **10 marks**
- 10- **Put the sign (√) on the correct statement and the sign (X) on the incorrect statement** **10 marks**
 - a- Hydrogels are hydrophilic polymers that absorb water and are soluble in water at physiologic temperature ()
 - b- Poly vinyl alcohol can be produced from poly vinyl acetate ()
 - c- Smoke Suppressants is to increase smoke evolution ()
 - d- Light stabilizers are effective as antioxidants at low and moderate temperature ()
 - e- Drugs can also be cannot covalently conjugated to the hydrogel matrix ()

EXAMINERS	Professor El-Refaie Kenawy		

علوم مواد ٤



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF PHYSICS

EXAMINATION FOR FORTH YEAR MATERIALS SCIENCE

COURSE TITLE: MICROCONTROLLERS AND MICROPROCESSORS MS 4254

DATE: 23- 5- 2015

MARKS:

100

TIME 2 HOURS

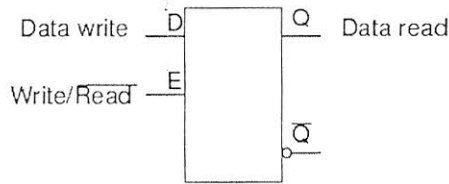
Answer all the following questions:

1- State the different applications of Shift registers and discuss in some details only two of these applications. (25 Marks)

2- Draw a block diagram for a **1 K –Byte** memory showing all possible input and outputs details ,and discuss briefly the use of both **Static** and **Dynamic** memories in computers (15 Marks)

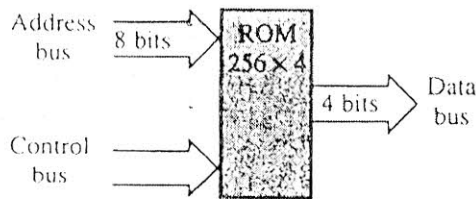
Then answer only one of the following:

(A) Using the following one bit memory block diagram show how the **Tristate** buffer is used to connect the data write (D) and data read (Q) can be connected to the same data line bus(in/out) (10 Marks)




(B) Using the following block diagram of a memory of 256x4 bits ,show how this can be used for the two types of memory expansion

(10 Marks)



Turn the Page

	TANTA UNIVERSITY- Faculty of Science -Department of physics			
	EXAMINATION FOR LEVEL 4 STUDENTS OF MATERIALS SCIENCE			
	COURSE TITLE:	Materials in Electronics		COURSE CODE: MS4244
DATE:	6 JUNE 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

ANSWER THE FOLLOWING QUESTIONS:

First Question:

- 1- Write the most important notes **about the materials** which are used for **printed electronics** and **substrates**. (15 Marks)
- 2- Compare between vapor-phase epitaxy and molecular beam epitaxy. (10 Marks)

Second Question:

- 1- Give examples of elemental semiconductors and compound semiconductors and some of their applications. (10 Marks)
- 2- Illustrate briefly Czochralski method and particularly liquid-encapsulated Czochralski method. (15 Marks)

Third Question:

- 1- What is the origin of magnetic properties in different materials? (5 Marks)
1. **Write short points about :**
 - a- Planck's theory of black body radiation.
 - b- De Broglie assumption.
 - c- Schrödinger wave equation.
 - d- The most important postulates (I, II and III) of quantum mechanics. (20 Marks)

Fourth Question:

- 1- Choose the right statement from between the brackets: (16 Marks)
 - a- The diamond structure can be thought of as an fcc lattice with an extra atom placed at $(\frac{a}{2}+\frac{b}{2}+\frac{c}{2} - \frac{a}{4}+\frac{b}{4}+\frac{c}{4})$ from each of the fcc atoms.
 - b- In composites, the individual components (**completely interact - remain separate and distinct**) within the finished structure.
 - c- The chemical formula for perovskite compounds is ABX_3 , where 'A' and 'B' are two (**anions - cations**) of very different sizes, and X is the (**cation- anion**) that bonds to both.
 - d- Off-centering of an undersized B ion within its (**tetrahedron - octahedron**) can occur and allows it to attain a stable bonding pattern and the resulting electric dipole is responsible for the property of (**ferroelectricity - ferromagnetism**) shown by some perovskites.
 - e- Soft ferrites have (**low -high**) coercivity whereas hard ferrites have (**low - high**) coercivity.
- 2- **Define:** (9 Marks)
 1. Magnetoresistance
 2. Giant magnetoresistance (GMR)
 3. Colossal magnetoresistance (CMR).

☺ ☺ BEST WISHES ☺ ☺

EXAMINERS	PROF. DR. S. A. SAAFAN
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