

MCA SEM IV (CBCGS)

Embedded Systems

QP Code :17816

11/12/2014

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question no: 1 is compulsory
(2) Attempt any Four from remaining.

1. (a) Explain Architectural diagram of 8051 in detail 10
(b) Explain any three scheduling algorithms used in RTOS 10
2. (a) Explain in detail RS 232 communication with connector configuration. 8
(b) What are the emulators and explain emulation techniques. 7
3. (a) Explain interrupt service routine in detail. 8
(b) Explain Instruction level parallelism? 7
4. (a) Explain handheld operating system iOS or Windows OS in detail. 8
(b) Explain different types of memories in detail. 7
5. (a) Explain difference between CISC and RISC. 8
(b) Describe architectural details of Embedded Linux? 7
6. (a) What is the Semaphores and explain semaphore management function calls. 8
(b) Write a program or pseudo-code for LED blinking? 7
7. Write short notes on any Three :- 15
 - (a) Cross compiler
 - (b) Mutex
 - (c) Watch Dog Timer
 - (d) JTAG
 - (e) USB

MCA sem IV (CB45)

QP Code :17822

E - Business

11/12/2014

(3 Hours)

[Total Marks : 80

N.B. (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions from the remaining **six** questions.

(3) Illustrate answers with neat sketches wherever **required**.

(4) Answers to questions should be grouped and written **together**.

1. (a) What is E-Business? Discuss various E-Business models with appropriate illustrations. 10
(b) Explain various factors affecting E-Business success in detail. 10
2. (a) What is EDI? Explain EDI VADS in detail. 8
(b) Explain Whiteley's Model in detail. 7
3. (a) What are various security issues in E-Business? List and explain various network and website security risks in detail. 8
(b) What is Organization? Explain why organization is a system with the help of Levitt's model. 7
4. (a) What do you mean by Entrepreneurial Process? Explain with the help of process diagram. 8
(b) What is MIS? Explain contemporary approaches to Information System. 7
5. (a) Discuss how information system impact organizations and business firms ? 8
(b) Explain the importance of information system in a digital firm and its new opportunities with technologies. 7
6. (a) What is Business Process? Explain various types of Business Information Systems from a constituency perspective. 8
(b) "The selection of Information Technology is a Strategic Decision in MIS development", Explain it. 7
7. Write the short notes on any **three** : 15
 - (a) Electronic Markets
 - (b) Porter's Competitive Model
 - (c) Business implications of EDI
 - (d) MIS The factors for success and failure
 - (e) Impact of IT on Management Decision making.

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No.1 is Compulsory.
(2) Attempt any four from Q.2 to 7.

1. Write short notes on any four of the following:- 20
 - (a) List the characteristics of Java sockets.
 - (b) Compare Applet and Application.
 - (c) What is Cookies? Explain with simple program.
 - (d) Compare JSP and Servlets.
 - (e) Difference between Input stream and output stream.

2. (a) Explain different types of layout manager in detail? 8
(b) What are the Different types of EJB & Explain EJB Architecture with neat diagram? 7

3. (a) What are available drivers in JDBC? What does Class.forName () method do? 8
(b) Explain the callback methods in Entity beans. 7

4. (a) Explain how Exception handling is done in java. Write a program to demonstrate use of throw Keyword. 8
(b) What is object serialization? What is use of serialVersionUID? 7

5. (a) What is static method & static variable Explain with Suitable example? 8
(b) What is advantage of putting business logic in EJB over stored procedure? 7

6. (a) What are servlets? Explain Servlets life cycle in detail with example? 8
(b) Explain the different resultset constant & resultset types? 7

7. (a) Explain why java don't support multiple inheritance. Write a program to demonstrate Use of Interface. 8
(b) When a client request is sent to the servlet container, how does the container choose which servlet to invoke? 7

QP Code : **17804**

[3 Hours]

[Total Marks:80

- N.B. : (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** from remaining **six** questions.

- | | | |
|----|--|----|
| 1. | (a) Write a note on data partitioned parallelism. | 5 |
| | (b) Write a note on nesting and unnesting. | 5 |
| | (c) Write a note on asynchronous replication in distributed databases | 5 |
| | (d) Differentiate between Datawarehouse Vs Datamarts | 5 |
| 2. | (a) Define OLAP. Explain MOLAP and ROLAP with suitable diagrams. | 8 |
| | (b) What are the different complex data types available in ORDBMS? Explain with example. | 7 |
| 3. | (a) Explain concurrency control and recovery in Distributed Database Management System. | 8 |
| | (b) Explain the features of XML and also differentiate XML with HTML. | 7 |
| 4. | (a) Explain ORDBMS database implementation challenges in detail. | 8 |
| | (b) Discuss the architecture of distributed database system in detail. | 7 |
| 5. | (a) What is priori property? Describe an algorithm for finding frequent item sets. | 8 |
| | (b) Describe the steps of data warehouse implementation. | 7 |
| 6. | (a) What is Dimension modeling? Discuss different dimension modeling techniques in detail. | 8 |
| | (b) Define Classification. Explain K-nearest Neighbors algorithm in detail. | 7 |
| 7. | Write short notes on:— | 15 |
| | a. RDBMS Vs ORDBMS | |
| | b. Multimedia databases | |
| | c. Web Content Mining | |

N.B. : (1) Question No. 1 is compulsory.

(2) Attempt any **four** out of remaining **six** questions.

(3) Make assumptions if required and justify it.

1. (a) Explain in detail simulation application in anyone of the following system: **10**
- (i) Patient flow analysis in a hospital.
 - (ii) Book counter analysis in a library.
 - (iii) Goods flow analysis in a grocery shop.
- (b) Use the mixed congruential method to generate a sequence of five two digit random numbers with $X_0 = 27$, $a=17$, $c=43$, and $m=100$. Also use the Kolmogorov-Smirnov test with $\alpha = 0.05$ to determine if the hypothesis that the numbers are uniformly distributed on the interval $[0,1]$ can be rejected. **10**
2. (a) The breaking strengths of mild steel bar is normally distributed. A sample of 18 observations is collected. Determine the maximum likelihood estimator. **8**

345.15	481.32	614.14	732.75	545.78	464.21	809.94
792.07	662.35	517.55	669.88	441.59	556.79	787.63
693.25	522.72	381.28	489.46			

- (b) Explain the steps in simulation study. **7**
3. (a) The number of customer arriving at coffee shop between 9:00am to 9:00pm is poisson distributed with mean 4. Generate Poisson variate using acceptance rejection technique. Use the following five random numbers 0.5389, 0.0532, 0.3492, 0.2373, 0.0123 in sequence. **8**
- (b) Derive the Conservation Equation in the context of measures of performance of Queuing models. **7**
4. (a) An NGO collected the records of monthly number of job related accidental injuries at an underground coal mine for study. The records for the past 100 months are as follows: **8**
- | | | | | | | | |
|-------------------------------|----|----|----|---|---|---|---|
| Accidental injuries per month | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Frequency | 35 | 40 | 13 | 6 | 4 | 1 | 1 |

[TURN OVER]

Use the Chisquare test to test hypothesis that the underlying distribution is poisson and $\chi_{0.05,2}^2 = 5.99$

(b) Explain the types of simulation with respect to output analysis. 7

5. (a) Consider the sequence of 40 numbers. Test whether 5th, 10th, 15th number in the sequence are autocorrelated where $\alpha = 0.05$. ($Z_{0.25} = 1.96$) 8

0.97 0.40 0.84 0.02 0.82 0.29 0.69 0.51 0.63 0.15
0.17 0.71 0.65 0.26 0.51 0.67 0.38 0.44 0.75 0.59
0.09 0.49 0.84 0.81 0.60 0.43 0.53 0.72 0.33 0.66
0.96 0.27 0.41 0.54 0.18 0.26 0.87 0.11 0.20 0.78

(b) What are the measures of performance and their estimation for output data. 7

6. (a) Suppose that the life of a computer IC is exponentially distributed with mean 4. Generate two life times from this distribution where $R_1 = 0.762$ and $R_2 = 0.389$. 8

(b) What are the characteristics of a queue. Mention the measures of performance of queuing system with proper notations. 7

7. (a) Write short notes on 8

(i) Verification of Simulation Models.

(ii) Properties of Random Numbers.

(b) Derive the inverse transformation method for Weibull distribution. 7

QP Code :17810

(3 Hours)

[Total Marks : 80

- N.B :** (1) Question no. 1 is **compulsory**.
 (2) Answer any **four** of the remaining **six** questions.
 (3) Answers to the questions should be grouped and written together.
 (4) **Figures** on the **right** indicate **full** marks assigned to the question.
 (5) **Do not reveal your identity** in the letters and reports

- | | | |
|----|---|----|
| 1. | (a) What is the meaning of personality? What are the determinants of personality? | 10 |
| | (b) What are the cross-cultural barriers to communication? What are the methods of overcoming them? | 10 |
| 2. | (a) What is meant by Emotional Intelligence? How important is it in the IT industry? | 8 |
| | (b) What are the Do's and Don'ts of an interview? | 7 |
| 3. | (a) Explain the factors to be kept in mind while writing a business e-mail. | 8 |
| | (b) What is the role of counseling in managing stress? | 7 |
| 4. | (a) What is meant by non-verbal communication? Explain any three in detail. | 8 |
| | (b) What is the role of grapevine as an informal channel of communication in an organization? | 7 |
| 5. | (a) As General Secretary of the Students' Council draft a notice along with the agenda for a meeting of the Students' Council to plan the Annual Technical Fest to be held in your college. | 8 |
| | (b) Write the minutes of the meeting for the same. | 7 |
| 6. | (a) What are the strategies for conducting a successful business meeting? | 8 |
| | (b) What are the traits of a good leader? | 7 |
| 7. | Write short notes on any three :— | 15 |
| | (a) Motivation | |
| | (b) Team building | |
| | (c) Assertiveness | |
| | (d) Attitude. | |