

(3 Hours)

Total Marks : 80

Note : (1) Question No. 1 is compulsory.

(2) Attempt any four questions out of the remaining Q. 2 to Q. 7

1. Attempt any four:-

- a) Wrapper Classes 20
- b) JSP Architecture
- c) Cascading style sheets
- d) Abstract class
- e) Object Serialization and Deserialization

- 2. a) What is Inheritance? Explain hybrid inheritance with suitable example. 8
- b) Write a program to sort following city names in ascending order - Kolkata, Delhi, Pune, Mumbai, Surat, Indore, Bengaluru, Hyderabad. 7
- 3. a) What is Object Oriented Programming? Explain OOP's Concepts in java with suitable examples. 8
- b) What are differences between Generic Servlet and Http Servlet. 7
- 4. a) Describe java program steps in order to get connectivity to database along with example. 8
- b) Explain Request Dispatching in Servlet. What are differences between Request Dispatching and send redirecting? 7
- 5. a) Explain Event Delegation Model in java with Suitable example. 8
- b) What is Exception? Explain Handling process for any two java's unchecked runtime exception subclasses. 7
- 6. a) What is Data Race Condition? Explain how you will eliminate data race condition in multithreaded application in java. Give an Example? 8
- b) What is EJB? Explain different types of EJB. 7
- 7. a) What is JSP? Explain JSP Life cycle with suitable example. 8
- b) What is struct? Explain features of structs. 7

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- N.B.: (1) Q. 1 is compulsory.  
 (2) Attempt any four out of remaining six.  
 (3) Figures to the right indicate full marks.

Q 1A) Explain in detail simulation application in any one of the following system.

- (i) Customer flow analysis in super market..  
 (ii) Vehicle flow analysis at petrol pump

[10]

B) Consider a drive in restaurant where carhops take order and bring food to the car. Car arrives according to the interarrival distribution of cars. There are two carhops, Able and Baker. The distribution of their service time is also given.

[10]

Interarrival time of cars (min)	1	2	3	4
Probability	0.25	0.40	0.20	0.15

Able's Service Time (min)	1	2	3	4
Probability	0.30	0.30	0.25	0.15

Baker's Service Time (min)	1	2	3	4
Probability	0.35	0.25	0.20	0.20

Develop the simulation table and analyse the system by simulating the arrival and service of 8 customers. Assume that the first customer is arriving to system at 0<sup>th</sup> time. Random digits for interarrival time and service are given below:

Customer No	1	2	3	4	5	6	7	8
RD for Interarrival Time	---	94	77	49	45	43	32	49
RD for Service Time	80	20	15	88	98	65	86	73

Q 2.A) Consider the following sequence of 30 numbers

[07]

0.29	0.26	0.92	0.73	0.14	0.26	0.39	0.66	0.54	0.15
0.91	0.48	0.02	0.55	0.67	0.09	0.30	0.24	0.12	0.59
0.96	0.34	0.91	0.84	0.21	0.33	0.87	0.18	0.79	0.56

Test whether 2nd, 8th, 14th, ..... numbers in the sequence are auto correlated where  $\alpha = 0.05$  (given  $Z_{0.025} = 1.96$ )

{TURNOVER

- B) Explain the flow diagram that shows the various steps involved in simulation study [08]
- Q 3A) A medical examination is given in 3 stages by a physician. Each stage is exponentially distributed with a mean service time of 20 mins. Find the probability that the exam will take 50 mins or less. [07]
- B) What do you mean by pseudo random number? Describe the random numbers generation? [08]
- Q 4A) Discuss multivariate and Time-Series Input Models [07]
- B) A college professor is leaving home for summer but would like to have a light bulb burning at all times to discourage burglars. The professor rigs up a device that will hold two light bulbs. The device will switch the current to the second bulb if the first bulb fails. The box in which the light bulbs are packaged says "Average life 1000 hours, exponentially distributed." The professor will be gone 90 days (2160 hours). What is the probability that a light will be burning when the summer is over and the professor returns?. [08]
- Q 5A) The percentage of distribution of income size into 10 parts 15.5, 22.9, 16.6, 3.5, 30.5, 6.6, 12.8, 1.7, 9.9 and 13.3. Determine the maximum likelihood estimators  $\mu$  and  $\sigma^2$ . [07]
- B) What are the methods used to generate random numbers? Explain with the help of example [08]
- Q 6A) Explain validation of model assumptions in short. [07]
- B) Derive the inverse transformation method for Weibull distribution [08]
- Q 7 Write a short note on following (Attempt any Three) [15]
- |                                     |   |
|-------------------------------------|---|
| i) Static or Monte Carlo simulation | iii) Advantages and disadvantages of simulation |
| ii) Steady state simulations        | iv) Poisson distribution.                       |
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- Note: 1) Question 1 is compulsory.  
 2) Attempt any four out of remaining six questions  
 3) All questions carry equal marks

Q-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
Q-2)	a)	What is meant by Emotional Intelligence? How important it is in the Industry?	8
	b)	What are the traits of good leader?	7
Q-3)	a)	What is meant by motivation? Explain Maslow's theory of motivation.	8
	b)	Explain the 7C's of communication?	7
Q-4)	a)	What is stress? How it can be managed? What methods organizations can adopt to reduces stress levels of their employees?	8
	b)	What is the difference between team and a group? What are the characteristics required for the team to be effective?	7
Q-5)	a)	Write an application with CV to apply for the post of senior software engineer in XYZ INFOTECH.	8
	b)	Explain the SMART Goal terminology with suitable example?	7
Q-6)	a)	Explain grapevine communication and its importance in an organization?	8
	b)	Explain the five stage model of group development?	7
Q-7)		Write short notes: (any three)	15
	a.	Email etiquette	
	b	Decision making	
	c	Group discussion skills	
d	Time management		

Duration : 3 hrs

Marks : 80

Note: Q.1 is compulsory

Attempt Any four question from Q. 2 to Q. 7

Figures to right indicates marks

Additional information can be considered but justify the same

- Q 1. a) Explain architecture of Data warehouse with neat diagram [10]  
b) Write difference between (Any Two) [10]  
    a. OLTP Vs OLAP  
    b. Operational system Vs Informational system  
    c. OODBMS and ORDBMS  
    d. DW and Data mart
- Q 2. a) Compare various architecture available in parallel database with real time example based on it. [08]  
b) Explain OLAP architecture with a neat diagram [07]
- Q 3. a) Explain recovery process in distributed DBMS. Prove statement "recovery in DDBMS is more complicated than in centralized system". [08]  
b) Compare different data storing techniques available in DDBMS [07]
- Q 4. a) Compare different types of web mining with appropriate example [08]  
b) List characteristics of XML. Explain XML documents and databases. [07]
- Q 5. a) Explain Fact Constellation Schema for Inventory management system assuming appropriate information. [08]  
b) Explain K-nearest Neighbors algorithm in detail with an example [07]
- Q 6. a) Explain bitmap index. When does it make sense to use a bitmap index? Explain with an example. [08]  
b) Explain KDD in detail. Write down the importance of Data mining in KDD Process [07]
- Q 7. Write Short Notes on ANY THREE [15]  
    a) New Challenges in implementing ORDBMS  
    b) Spatial DB  
    c) MOLAP  
    d) Distributed Catalog Management  
    e) Persistent programming languages

MCA

Elective - J : Human Computer System Interface

sem IV

03/12/16

CBGS

QP Code : 516101

(3 Hours)

[ Total Marks : 80

- N. B. :** (1) Question No. 1 is **compulsory**.  
(2) Attempt any **four** questions from the remaining **six**.  
(3) **Figures** on the **right** indicates full **marks**.

1. (a) What are the advantages and disadvantages of Graphical System? **10**  
(b) Explain different technological considerations in screen design
  2. (a) Explain the concept of Direct and Indirect Manipulation **10**  
(b) What are the different interface design goals?
  3. (a) Discuss various Windows Presentation styles **8**  
(b) Explain various device based controls **7**
  4. (a) Discuss colour along with its uses and problems on a system **8**  
(b) Explain System Training and Documentation **7**
  5. (a) What are the important human characteristics in design? **8**  
(b) Explain the structure and kinds of Menus **7**
  6. (a) What is Window management? How it is managed in web systems? **8**  
(b) Write a note on Operable Controls **7**
  7. (a) Explain different characteristics and components of a window **8**  
(b) Discuss Internationalization and Localization **7**
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COURSE : M.C.A. (Sem. IV) (CBSGS)(Prog-T8624)

Paper Code: 516101

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Marking scheme for Q.1 and Q 2 will be as follows

Q. 1 a) for 10 marks

Q. 1 b) for 10 marks

Q. 2 a) for 8 marks

Q. 2 b) for 7 marks

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

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

1. (a) Discuss the term geocoding. What is the process of geocoding and explain it with a suitable example? (10)
- (b) Describe the geographic coordinate system and clarify the importance of datum in GIS. (10)
2. (a) Explain the geographic matrix as used to represent geographic data. (07)
- (b) Explain what is projection? Discuss the various methods of map projections. (08)
3. (a) What is overlay operation? Explain the groups of overlay operations and overlay methods in detail. (07)
- (b) What is pattern analysis? Describe Nearest Neighbor Analysis. (08)
4. (a) Explain the geographic coordinate system and clarify the importance of datum in GIS. (07)
- (b) Briefly explain the key data issues encountered in implementing GIS. (08)
5. (a) Explain the difference between the object based data model and georelational data model. (07)
- (b) List the major application areas of GIS. (08)
6. (a) With the aid of a diagram, describe the configuration of a geospatial data warehouse. (07)
- (b) Explain the concept of data classification and feature coding. (08)
7. Write Short Notes on **any three** :- (15)
  - a) Buffering
  - b) Topology
  - c) Spatial data and attribute data.
  - d) Digitizing Process



LYCA

# Elective - I - E - Business

Sem IV 03/12/16

CBGS

QP CODE : 516001

(3 Hours)

[Total Marks: 80

N.B.: (1) Question No. 1 is **Compulsory**.

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

(3) Answers to **sub-questions** should be **grouped** and written **together**.

(4) Draw the **diagrams** wherever **required**.

- Q.1 (a) What is E-Business? Explain various factors affecting E-Business success. 10  
(b) Explain the prototype and life cycle approach for development of MIS. 10
- Q.2 (a) What do you mean by Enterprise applications? Discuss different Enterprise applications. 8  
(b) Explain impact of E-Business on society in detail. 7
- Q.3 (a) What is information? What are the parameters on the basis of that the quality of information can be measured? 8  
(b) Discuss various categories of E-Business with appropriate illustrations. 7
- Q.4 (a) What is Electronic Market? Explain advantages and disadvantages associated with Electronic Market. 8  
(b) Explain Entrepreneurial Process in detail. 7
- Q.5 (a) What is business Process? Explain various types of Business Information System from a functional perspective. 8  
(b) What is EDI? Discuss technical aspects of EDI. 7
- Q.6 (a) What is organization? Explain the behavioral view and features of the organization 8  
(b) What is Information System? Explain various contemporary approaches to Information Systems. 7
- Q.7 Write short notes on any **three** :- 15  
(a) Porter's Competitive Model  
(b) E-Business: Current global situation  
(c) Whiteley's Model  
(d) Content of MIS plan