Total No. of Questions : 6]

SEAT No. :

P3669

[Total No. of Pages : 1

[5269]-15

M.B.S./M.M.S.

COMPUTER SPECIALIZATION

103 C : Software Engineering

(2008 Pattern) (Semester - I)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. No. 1 and 6 are compulsory.***
2) ***Solve any two from remaining.***
3) ***Figures to right indicate full marks.***

Q1) Draw context level and first level data flow diagram for sale system and Design screen layout for input. **[20]**

Q2) Explain and compare waterfall and prototyping approaches of system development. **[15]**

Q3) Explain user interface design. Also explain various validations to be done while inputting the data. **[15]**

Q4) What is maintenance? Why maintenance is a difficult activity. Explain how it is done. **[15]**

Q5) What is WEB Engineering and Agile process? **[15]**

Q6) Write short notes on any four: **[20]**

a) CASE Tool.

b) Data Dictionary.

c) Skill of System Analyst.

d) Object oriented methodology.

e) GUI.

f) SDLC.

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Total No. of Questions : 6]

SEAT No. :

P3575

[Total No. of Pages :2

[5270] - 21

M.C.A. (Management Faculty)

MT - 21 : PROBABILITY & COMBINATORICS

(2008 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No.1 and Question No.4 are compulsory.***
2) ***Solve any one from Question Nos. 2 and 3 and solve any one from Question Nos. 5 and 6.***
3) ***Use of statistical table and non programmable calculator is allowed.***
4) ***Figures to the right indicate full marks.***

Q1) a) State and prove generalized principle of Inclusion and Exclusion. **[5]**

b) Find the number of integer valued solutions of the following equation. **[5]**

$x_1 + x_2 + x_3 = 28 \qquad x_1 > 3, x_2 \geq 3, x_3 \geq 2$

c) Solve the following Recurrence relation **[5]**

$a_r - 7a_{r-1} + 10a_{r-2} = 0$, given that $a_0 = 0$, $a_1 = 3$

d) Find the coefficient of $x^6 y^9 z^3$ in the expansion of $(x^2 - 2y^3 + 3z)^9$. **[5]**

Q2) a) Using combinatorial argument prove the following binomial identities. **[8]**

i) $\binom{n}{k}\binom{k}{m} = \binom{n}{m}\binom{n-m}{k-m}$

ii) $\binom{2n}{2} = 2\binom{n}{2} + n^2$

b) Find the number of 3 digit numbers that have 5 in its decimal representation. **[7]**

Q3) a) Determine the Discrete Numeric Function corresponding to generating function. **[8]**

$$\frac{z^5}{1 - 2z + z^2}.$$

b) How many ways 15 out of 30 students sit around a circular table and remaining around another circular table? **[7]**

P.T.O.

Q4) a) Derive probability mass function of Hyper- geometric random variable. **[6]**

b) Calculate mean and Variance of Poisson random variable X. **[7]**

c) Joint distribution of X & Y is given by **[7]**

$$f(x,y) = 4xye^{-(x^2+y^2)};\ x \geq 0, y \geq 0$$

Test whether X and Y are independent. For the above distribution find the conditional density of X given Y= *y*.

Q5) a) State Baye's theorem and using Baye's solve the following problem. **[8]**

In a bolt factory machines A,B and C manufacture 25%, 35% and 40% bolts of the total respectively. Of their outputs 4%,4%,2% respectively are defective. A bolt is drawn at random and is found defective. What are the probabilities that it was manufactured by A.

b) If the M.G.F. of random variable X is given by $M_x(t) = \frac{3}{3-t}$ obtain the standard deviation of X. **[7]**

Q6) a) Joint probability distribution of two dimensional random variable (X,Y) is given below. **[8]**

X \ Y	0	1	2	3	4
0	0.05	0.10	0.15	0.05	0.03
1	0.08	0.09	0.15	0.04	0.03
2	0.05	0.09	0.03	0.04	0.02

Find:

i) Marginal distributions of X and Y.

ii) Conditional distributions of X given Y=2

iii) P[Y > X]

b) State and prove memoryless property for geometric distribution. **[7]**

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Total No. of Questions : 7]

SEAT No. :

P3576

[Total No. of Pages : 2

[5270]-42

M.C.A. (Management Faculty)
BM - E1 : MIS FRAMEWORK AND IMPLEMENTATION
(2008 Pattern) (Elective) (Semester - IV) (New)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Question No. 1 and 7 are compulsory.***
2) ***Solve any four questions from remaining.***
3) ***Figures to the right indicate full marks.***

Q1) Explain the architecture and components of expert system. **[10]**

Q2) Explain the informational needs of the managers working at different levels of managerial hierarchy. **[10]**

Q3) Explain the impact of IT infrastructure of the socio-economic environment of the organization. **[10]**

Q4) Explain the techniques of evaluating information technology investments. **[10]**

Q5) How information technology changing the way when marketing function is performed? **[10]**

Q6) Explain the different threats to IT Infrastructure. **[10]**

P.T.O.

Q7) Write short notes on (Any Four): **[20]**

a) Executive Information System

b) Organizational Communication

c) Strategic role of information system

d) Group Decision Support System

e) Critical success factor in implementing IT applications

Total No. of Questions : 9]

SEAT No. :

P3577

[Total No. of Pages :3

[5270] - 43

M.C.A. (Faculty of Management)

FOUNDATION OF DECISION PROCESSES

(2008 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt any SEVEN from the following.***
2) ***Use of non- programmable calculators is allowed.***
3) ***Figures to the right indicate full marks.***

Q1) Explain the steady state Markov process with example. **[10]**

Q2) A retailer purchases strawberries every morning at Rs.50 a case and sells them for Rs.80 a case. Any case remaining unsold at the end of the day can be disposed off next day at a salvage value of Rs.20 per case (thereafter they have no value).Past sales have ranged from 15 to 18 cases per day.The following is the record of sales for the past 120 days. **[10]**

Cases Sold	15	16	17	18
No.of Days	12	24	48	36

Find how many cases the retailer should purchase per day to maximize his profit.

Q3) A management is faced with a problem of choosing one of three products for manufacturing. The potential demand for each product may turn out to be good, moderate or poor. The probabilities for each of the states of nature were estimated as follows: **[10]**

Product	Nature of Demand		
	Good	Moderate	Poor
X	0.70	0.20	0.10
Y	0.50	0.30	0.20
Z	0.40	0.50	0.10

P.T.O.

The estimated profit or loss in Rs. Under the three states may be taken as:

Product	Good	Moderate	Poor
X	30,000	20,000	10,000
Y	60,000	30,000	20,000
Z	40,000	10,000	-15,000

Prepare the expected value table and advise the management about the choice of the product.

Q4) Explain the various Models of Queuing system. **[10]**

Q5) In a Bank, handled by one teller, customers arrives after every 4 minutes. The teller can handle 30 customers in a hour. Find: **[10]**

a) The probability that the teller is busy.

b) Expected number of customers waiting in the bank.

c) The average time spent by the customer in the bank waiting for their turn.

Q6) Solve the game whose pay-off matrix is given below: **[10]**

		Player B			
		B_1	B_2	B_3	B_4
Player A	A_1	3	2	4	0
	A_2	3	4	2	4
	A_3	4	2	4	0
	A_4	0	4	0	8

Q7) Acompany manufactures 30 items per day. The sale of these items depends upon demand which has the following distribution: **[10]**

Sales(Units)	27	28	29	30	31	32
Probability	0.10	0.15	0.20	0.35	0.15	0.05

The production cost and sale price of each unit are Rs.40 and Rs.50 respectively. any unsold product is to be disposed off at a loss of Rs.15/-unit.

Use the following random numbers to estimate total profit/loss for next 10 days.

10 99 65 97 01 79 11 16 20 34

Q8) A super market has a single cashier. During the peak hours customers arrive at a rate of 20 customers per hour. The average number of customers that can be processed by the cashier is 24 per hour. **[10]**

Calculate:

a) The probability that the cashier is idle.

b) The average number customers in the supermarket.

c) The average time a customer spends in the system.

d) The average number of customers in the queue.

Q9) Explain the dominance rules in Game with proper example. **[10]**

Total No. of Questions : 7]

SEAT No. :

P3578

[Total No. of Pages : 2

[5270]-44

M.C.A. (Management Faculty)

BME - 4 :COLLABORATIVE MANAGEMENT

(2008 Pattern) (Semester - IV) (Elective)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt any five questions.***
2) ***Support your answer with relevant examples.***
3) ***All the questions carry equal marks.***

Q1) Explain the Collaborative Management in brief.

Q2) a) Describe BCG matrix.

b) Explain GE Nine Cell model. What is the advantage of GE Nine Cell over BCG matrix?

Q3) Leadership style, corporate culture, values and ethics play a crucial role in effective implementation strategy. Comment.

Q4) What do you understand by Mergers and Acquisitions? What are various types of mergers?

Q5) A value chain is a chain of activities for a firm operating in a specific industry. Explain the concept and discuss its competitive advantages.

P.T.O.

Q6) Elaborate Porter's five forces framework with the help of suitable examples.

Q7) Write short notes on (Any Two):

a) SWOT Analysis.

b) Lease Financing.

c) Core competencies.

d) Mckinsey's 7s frame work.

e) Corporate Planning and Budgeting.

Total No. of Questions : 7]

SEAT No. :

P3579

[Total No. of Pages : 2

[5270]-45

M.C.A. (Management Faculty)

BME - 5 :Elective : 415 : DECISION SUPPORT SYSTEM

(2008 Pattern) (Semester - IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Questions No. 1 and 7 are compulsory.***
2) ***Answer any four questions from remaining questions.***

Q1) Explain with help of examples how Data Mining can be helpful in identifying business opportunity to create sustainable competitive advantage. **[10]**

Q2) Explain importance of Artificial Intelligence and expert system in DSS. **[10]**

Q3) Discuss DSS technology levels and tools along with DSS development platform. **[10]**

Q4) Discuss the models of ES and DSS integration. **[10]**

Q5) Explain the database organization and structures used in DSS. **[10]**

Q6) Explain ESS with an example and enumerate ESS characteristics and capabilities. **[10]**

P.T.O.

Q7) Write short notes on (Any Four): **[20]**

a) GIS

b) OLAP

c) MRP

d) DSS Implementation

e) SCM

Total No. of Questions : 7]

SEAT No. :

P3580

[Total No. of Pages : 1

[5270]-51

M.C.A. (Mgmt. Faculty)
HUMAN COMPUTER INTERFACE
(2008 Pattern) (Semester-V)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 1 is compulsory.***
2) ***Solve any five from remaining.***

Q1) Answer any four: **[4×5=20]**

a) What are the goals of system engineering.

b) Explain Response time & Display rate.

c) Write Icon specific guidelines.

d) Explain presentation styles for error messages.

e) Explain various command organization strategies.

Q2) Explain dialog box design guidelines. **[10]**

Q3) Explain in brief the preparation of printed manuals. **[10]**

Q4) Explain four phase framework for textual search. **[10]**

Q5) Explain three pillars of Design. **[10]**

Q6) Explain five human factors that should be taken into account during user interface design. **[10]**

Q7) Write short note on (Any two): **[2×5=10]**

a) Hypertext & Hypermedia.

b) Participatory Design.

c) GOMS.

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Total No. of Questions : 7]

SEAT No. :

P3581

[Total No. of Pages : 1

[5270]-56

M.C.A. (Management Faculty)

ITE-2 : Elective: PROGRAMMING LANGUAGE PARADIGMS

(2008 Pattern) (Semester-IV)

Time : 3 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Q. 7 is compulsory.***
2) ***Solve any four from remaining.***

Q1) Explain attributes of a good programming language. **[14]**

Q2) Draw the structure of compiler and explain the function of each stage. **[14]**

Q3) Explain memory management of an object oriented programming language. **[14]**

Q4) Explain virtual computer in binding times. **[14]**

Q5) Explain with examples programmer and system controlled storages. **[14]**

Q6) Explain with suitable construct the sub-program call and return structure. **[14]**

Q7) Write short note on (any Two): **[14]**

a) Linking and Loading.

b) Firmware computer.

c) Embedded system.

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