

B.C.A. SEM–VI (2014 Course) CBCS : WINTER - 2018

SUBJECT : INFORMATION SECURITY

Day : Wednesday
Date : 14/11/2018

W-2018-1844

Time : 10.00 AM TO 01.00 PM
Max. Marks : 100

N. B. :

- 1) Attempt **Any FOUR** questions from **Section – I** and Attempt **Any TWO** questions from **Section - II**
- 2) Answers to both the section should be written in the **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** What is information security? Is information security need for an organization? Explain in brief with example. (15)
- Q.2** Who is responsible for risk management in an organization? What kind of methods should be followed to avoid that risk? (15)
- Q.3** What is encryption? What is fundamental difference between symmetric and asymmetric encryption. (15)
- Q.4** How digital certificates and digital signature differs from each other. (15)
- Q.5** Which security protocols are used to protect email? (15)
- Q.6** What practices are to be followed for authentication and authorization? (15)
- Q.7** Write short notes on **Any THREE** of the following : (15)
- a) Positions in information security
 - b) Bull's eye model
 - c) Physical security controls
 - d) DMZ

SECTION - II

- Q.8** Discuss maintenance model for information security with its components and diagram. (20)
- Q.9** One software company avenged the complaint that some of the former employees had accused and tempered the vital data of company. As a IT head suggest steps to investigate it. Also suggest controls to avoid the similar cases. (20)
- Q.10** a) Explain how to secure information with the help of VPN with example. (10)
- b) What is malware? Explain working of malware and it's damages. (10)

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B.C.A. SEM–VI (2014 Course) CBCS : WINTER - 2018

SUBJECT : BUSINESS INTELLIGENCE

Day : Friday
Date : 16/11/2018

W-2018-1845

Time : 10.00 AM TO 01.00 PM
Max. Marks : 100

N.B.

- 1) Attempt **ANY FOUR** questions from Section – I and **ANY TWO** questions from Section – II.
 - 2) Figures to the **RIGHT** indicate **FULL** marks.
 - 3) Answers to both the sections should be written in **SEPARATE** answer books.
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SECTION – I

- Q.1** Explain different OLAP operations. (15)
- Q.2** Explain Market Basket analysis in detail. (15)
- Q.3** Describe Apriori Algorithm with suitable example. (15)
- Q.4** What is multi-dimensional data model? Explain different schemas of Data Warehouse. (15)
- Q.5** What is Data Mining? Explain KDD process in detail. (15)
- Q.6** Write a note on
- a) Classification and Clustering (07)
 - b) Association Rule Mining (08)

SECTION - II

- Q.7** Why data preprocessing is required? Explain the different data preprocessing technique. How it is helpful in loading process of data warehouse? (20)
- Q.8** a) Explain different functionalities provided by business intelligence tools. (20)
b) Describe Business Intelligence Process.
- Q.9** What is data warehouse? Explain three tier architecture of Data Warehouse. State its different characteristics. (20)

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B.C.A. SEM–VI (2014 Course) CBCS : WINTER - 2018

SUBJECT : WEBSITE DEVELOPMENT

Day: Monday

Date: 19/11/2018

W-2018-1846

Time: 10.00 AM TO 01.00 PM

Max. Marks: 100

N.B.:

- 1) Attempt **ANY FOUR** questions from **Section-I** and **ANY TWO** questions from **Section-II**
 - 2) Answer to both the sections should be written in **SEPARATE** answer books.
 - 3) Figures to the right indicate **FULL** marks.
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SECTION – I

- Q.1** What is PHP? Explain different Operators and Expressions in PHP with example. (15)
- Q.2** Explain different looping statements in PHP with suitable example. (15)
- Q.3** What is array? Explain different sorting functions in an array. (15)
- Q.4** What is Session? Explain how session is created and destroyed in PHP. (15)
- Q.5** Explain different String Manipulating functions in PHP with example. (15)
- Q.6** What is function? Explain with examples how function is declared, defined and called in PHP. (15)
- Q.7** Write short notes on **ANY TWO** of the following: (15)
- a) Select, Update and Delete Statements in MY SQL
 - b) Aggregate functions
 - c) PHP classes

SECTION – II

- Q.8** Create a registration form according to give fields: Roll no, Name, Gender and a Submit button. All details should be displayed on the server page when user clicks the Submit button. (20)
- Q.9** What is MYSQL? What are different datatypes in MYSQL? Explain each of them with example. (20)
- Q.10** Create an Associative array with Student details and display it in table. (20)

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B.C.A. SEM–VI (2014 Course) CBCS : WINTER - 2018
SUBJECT : OPERATIONS RESEARCH

Day : Thursday
Date : 22/11/2018

Time : 10.00 AM TO 01.00 PM
Max. Marks : 100

W-2018-1847

N.B.:

- 1) Attempt **ANY FOUR** questions from Section – I and attempt **ANY TWO** questions from Section – II.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Graph papers and statistical table will be permitted if necessary.
- 5) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 An animal food company receives an order for producing at least 200 kg of a mixture per day, containing two ingredients A and B. The cost of the ingredients A and B is Rs. 2 per kg and Rs. 8 per kg respectively. A maximum of 80 kg of A and at least 60 kg of B must be used in preparing the food mixture. Formulate the LP model of the problem to find the amounts of the ingredients used, so that the cost of the food mixture comes to a minimum. Solve it using the graphical method. **[15]**

Q.2 Determine the optimum BFS to the following transportation problem using the MODI method: **[15]**

	D ₁	D ₂	D ₃	D ₄	
O ₁	5	3	6	2	19
O ₂	4	7	9	4	37
O ₃	3	4	7	5	34
	16	18	31	25	

Q.3 Solve the following assignment problem: **[15]**

Person	Job					
		1	2	3	4	5
	A	8	4	2	6	1
	B	0	9	5	5	4
	C	3	8	9	2	6
	D	4	3	1	0	3
	E	9	5	8	9	5

Q.4 Consider the following project: **[15]**

Activity	t ₀	t _m	t _p	Activity	t ₀	t _m	t _p
1 – 2	3	5	8	3 – 5	3	5	9
1 – 3	2	4	8	4 – 6	3	6	10
1 – 4	6	8	12	5 – 6	2	4	8
2 – 5	5	9	12	--	--	--	--

- a) Draw the network diagram.
- b) Find the expected time (duration) and variance for each activity.
- c) Find the critical path and the project variance.

P.T.O.

- Q.5** The conditional pay-offs (profit in Rs.) of different courses of action S_1 , S_2 and S_3 against the states of nature (events) N_1 , N_2 , N_3 and N_4 are given in the adjoining table. [15]

States of nature	Courses of action		
	S_1	S_2	S_3
N_1	4000	20,000	20,000
N_2	-100	5000	15,000
N_3	6,000	400	-2000
N_4	18,000	0	1000

Indicate the decision taken under the following approaches:

- a) Maximin b) Hurwitz criterion c) Regret

The degree of optimism is given as $\alpha = 0.7$.

- Q.6** A tollgate is operated on a highway where vehicles arrive according to Poisson distribution with a mean frequency of 1.2 vehicles per minute (min.). The time of completing toll tax payment is an exponential distribution with mean 20 seconds. Find: (a) P_0 (b) L_s (c) L_q (d) W_s (e) W_q (f) the probability that a vehicle spends more than 30 seconds in the system, and (g) the average waiting time in the queue for those who wait. [15]

- Q.7** Write short notes on **ANY TWO** of the following: [15]
- Limitations of Operations Research
 - Applications of Assignment Problems
 - Decision Tree
 - Applications of Operations Research

SECTION – II

- Q.8** A company manufactures two types of products, P_1 and P_2 . Product P_1 is of lower quality and product P_2 is of standard quality. The profit on P_1 is Rs. 30 and that on P_2 is Rs. 40. The raw material (in kg) required per unit of the product P_1 and P_2 is 60 and 120 respectively. The machinery (in hr) needed per unit of producing P_1 and P_2 are 8 and 5 respectively. The man-hours for the assembly per unit of P_1 and P_2 are 3 and 4 respectively. The total availability of raw material (in kg), machinery (in hr), and assembly (in hr) are 12,000, 600 and 500 respectively. Solve the problem using the simplex method for maximum overall profit. [20]

- Q.9** Determine an initial BFS to the following transportation table using LCM and VAM: [20]

		Destination				Supply
		D_1	D_2	D_3	D_4	
Origin	O_1	1	2	1	4	30
	O_2	3	3	2	1	50
	O_3	4	2	5	9	20
	Demand	20	40	30	10	100

- Q.10** a) Explain the crashing of simple networks. [10]
- b) Discuss the applications of queue models. [10]