

B.C.A. SEM-V (2014 COURSE) CBCS : WINTER - 2017
SUBJECT : INTRODUCTION TO THE INTERNET TECHNOLOGIES

Day : **Thursday**
Date : **09/11/2017**

Time : **02.00 PM TO 05.00 PM**
Max. Marks : 100

W-2017-1618

N.B.:

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

SECTION – I

- Q.1** What key issues should be considered while designing a Website? [15]
- Q.2** What is CSS? Explain types of CSS with syntax and appropriate example. [15]
- Q.3** Explain control statements used in Java script with appropriate example. [15]
- Q.4** Explain Imagemap tag in HTML and state its use. [15]
- Q.5** What is a protocol? Explain TCP/IP layers. [15]
- Q.6** Explain five built in string functions used in Java script. [15]

SECTION – II

- Q.7** Write a short note on: [20]
a) <Image>
b) <Div>
c) <Form>
d) <select>
- Q.8** Write a Java Script code to display odd numbers from first 1 to 20 numbers. [20]
- Q.9** Write HTML code to create following table. [20]

Satara Bus Station			
Bus No.	Source	Destination	Fare
1234	Satara	Pune	400
1256	Satara	Karad	300
1387	Satara	Sangli	250

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B.C.A. SEM-V (2014 COURSE) CBCS : WINTER - 2017
SUBJECT: OBJECT ORIENTED ANALYSIS & DESIGN

Day: **Saturday**
Date: **11/11/2017**

Time: **02.00 PM TO 05.00 PM**
Max. Marks: 100

W-2017-1619

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 book.

SECTION-I

- Q.1** Explain following with example: (15)
i) Association ii) Aggregation iii) Polymorphism
- Q.2** Explain Object Oriented concepts in detail. (15)
- Q.3** a) What is use of use-case diagrams? Differentiate between the roles of actors and users. (08)
b) Explain pre and post conditions in UML. (07)
- Q.4** a) Differentiate between specialization and generalization. (08)
b) Differentiate between object diagram and class diagram. (07)
- Q.5** a) Explain the term deployment diagram and describe its purpose. (08)
b) What is role of GRASP in assigning responsibility to classes and objects in OOAD? (07)
- Q.6** a) Write a detailed note on sequence diagram. (08)
b) Discuss the activity diagram and state chart diagram in detail. (07)
- Q.7** Write short notes on any **THREE** of the following: (15)
a) Rational unified process
b) Multiplicity
c) Stereotypes in UML
d) Package diagram
e) CRC

SECTION-II

- Q.8** Identify different objects and classes for “D-Mart shopping Mall” and draw Class diagram. (20)
- Q.9** Draw the sequence diagram for Loan Processing System in bank. (20)
- Q.10** Identify the use cases, classes and relationship for the Bank ATM system. Also draw use case diagram and Class diagram for the Bank ATM system. (20)

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B.C.A. SEM-V (2014 COURSE) CBCS : WINTER - 2017
SUBJECT: C# PROGRAMMING

Day : **Tuesday**
Date : **14/11/2017**

Time: **02.00 PM TO 05.00 PM**
Max. Marks: 100.

W-2017-1620

N.B.:

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

SECTION-I

- Q.1** What is the need of programming loops? Explain in detail various C# programming loops. (15)
- Q.2** Discuss various types of C# operators in detail. (15)
- Q.3** What is meant by delegates in C#? Illustrate with suitable example. (15)
- Q.4** What is polymorphism? Explain in detail compile time and run time polymorphism. (15)
- Q.5** Explain in detail the following access modifiers with example: (15)
- a) Public
 - b) Private
 - c) Protected
- Q.6** Describe the concept of 'Constructor' in detail with their types. (15)
- Q.7** Write short notes on any **THREE** of the following: (15)
- a) Sealed class
 - b) 'var' variable
 - c) Interface
 - d) LINQ

SECTION-II

- Q.8** a) Write C# program to sort given input array values in odd and even numbers. Display both sorted arrays separately. Input array values: 12, 17, 23, 40, 9, 13, 52, 45, 45. (10)
- b) Write C# program to display prime numbers from 1 to 25. (10)
- Q.9** Write C# program to transpose given matrix elements. Make necessary assumption for order of matrix. (20)
(Transpose operation: Interchanging row values and column values.)
- Q.10** a) Write a C# program to reverse a given string. (10)
- b) Design simple calculator using switch statement in C#. (10)

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B.C.A. SEM-V (2014 COURSE) CBCS : WINTER - 2017

SUBJECT : COMBINOTRICS & GRAPH THEORY

Day : Thursday

Time : 02.00 PM TO 05.00 PM

Date : 16/11/2017

W-2017-1621

Max. Marks : 100

N.B.:

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

SECTION – I

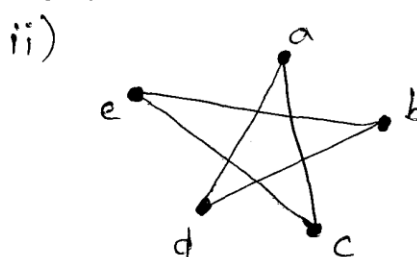
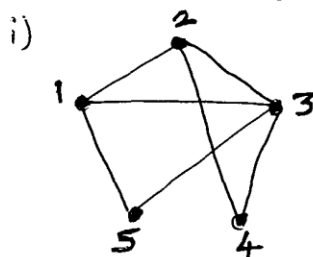
Q.1 a) Explain pigeonhole principle with two examples [07]

b) Find the probability of getting 2 king cards and 1 ace card when three cards are drawn from a well shuffled pack of 52 playing cards [08]

Q.2 a) Find $E(X)$ and $Var(X)$ from the following probability distribution : [07]

x_i	1	2	3	4	5	6
$p(x_i)$	$\frac{1}{36}$	$\frac{9}{36}$	$\frac{13}{36}$	$\frac{6}{36}$	$\frac{5}{36}$	$\frac{2}{36}$

b) Represent the following graphs by using adjacency matrix. [08]



Q 3 a) There are 5 girls and 4 boys who wish to take a photograph. In how many ways can they sit for a photograph in such a way that [07]
i) all girls always sit together?
ii) three boys are always together?

b) Explain sheep cabbage problem in detail. [08]

Q.4 a) Find the values of : [07]

- i) 8C_4 ii) 9C_3 iii) 5P_4 iv) 4P_0 .

b) Explain depth first search algorithm. [08]

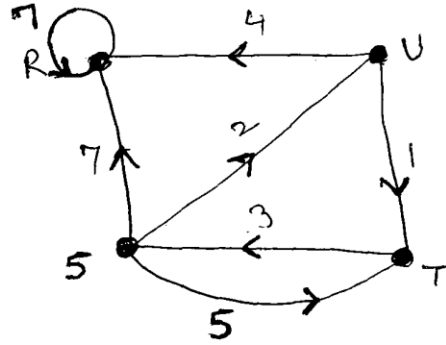
Q 5 Write short notes on **ANY THREE** of the following: [15]

- a) Cumulative probability distribution function
- b) Colouring of graphs
- c) Complete and planer graphs
- d) Bridges of Konigsberg problem

P.T.O.

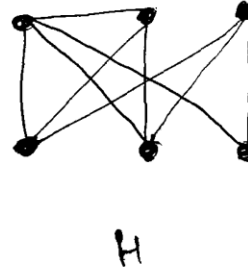
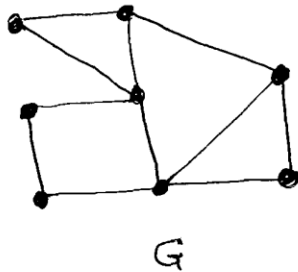
SECTION – II

- Q.6** Explain Warshall's algorithm. From the given graph, find the shortest path from each vertex to each other vertex by using Warshall's algorithm. [20]



- Q.7 a)** Find n if: [10]
 i) $P(n, 4) = 42 P(n, 2)$.
 ii) $C(n, 12) = C(n, 8)$.

- b)** Which of the following G and H graphs have: [10]
 i) Eulerian path?
 ii) Hamilton circuit?



- Q.8 a)** Find $E(X)$, $\text{Var}(X)$ and standard deviation from the following distribution: [10]

x_i	2	6	8	12	15
P_i	0.1	0.4	0.1	0.2	0.2

- b)** State and prove Bayes theorem. [10]

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