Roll No. 1710411030 26

12451

MCA 1st Semester (Regular/Re-Appear/Improvement) Examination – Jan.-2023

OBJECT ORIENTED PROGRAMMING WITH JAVA
(New Scheme)

Paper : MCA-2101

Time : Three hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all. Question No. **1** is ***compulsory***. Attempt ***four*** more questions by selecting ***one*** question from each Unit. All questions carry equal marks.

1. Explain the following : $2 \times 8 = 16$

   (a) Why Java is called a true object oriented language ?

P. T. O.

UNIT – II

4. (a) Explain ISO-OSI reference model with the help of diagram. 8

(b) Compare and contrast Internet, Intranet and Extranet in detail. 8

5. (a) What do you mean by layered architectures ? Explain in detail. 8

(b) What is ATM ? What are its features ? Also write its merits and demerits. 8

UNIT – III

6. (a) Explain shortest path algorithm with the help of an example. 8

(b) What is Token Bus ? How it is different from Token ring ? Write merits and demerits of token bus. 8

7. (a) What is file ? Write the advantage of file. Write a program in Java to read and write the data in the file. 8

(b) Explain different type of input/output classes available in Java with their purposes. 8

UNIT – IV

8. (a) What are cookies ? Write a program to create a cookie using servelet. 8

(b) What is the anatomy of JSP page ? Explain in detail. 8

9. (a) Write a program using servelet to display hello world on screen. 8

(b) What is use of tomcat server ? Explain the advantage of tomcat server. Also write step of execution of servelet program in tomcat server. 8

Roll No. 17104110301G

12453

MCA 1st Semester (Regular/Re-Appear/Improvement) Examination – Jan.-2023

COMPUTER NETWORKS

Paper : MCA-2103

Time : Three hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all taking ***one*** question from each Unit. Q. No. **1** is ***compulsory***. All questions carry equal marks.

1. Answer the following questions : $2 \times 8 = 16$

   (a) What is advantage of digital signal ?

   (b) What is baud rate ?

   (c) What is ISDN ?

P. T. O.

SECTION – D

8. (a) What is FTR ? How it is different from structured walkthrough ? Give merits and demerits of both. 8

(b) What is Software maintenance ? Explain its various types in detail. 8

9. (a) State and explain various software quality plans and activities in detail. 8

(b) Explain ISO 9000 quality model in detail. 8

Roll No. 17104/103026

12455

MCA 1st Semester (Regular/Re-Appear/Improvement) Examination – Jan.-2023

SOFTWARE ENGINEERING AND TESTING

Paper : MCA-2105

Time : Three hours] ***[Maximum Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any ***five*** questions in all, selecting ***one*** question from each Section. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. Answer the following questions : $2 \times 8 = 16$

   (a) What is specification language ?

   (b) What is Software engineering ?

   (c) What is Software safety ?

P. T. O.

(b) Explain symbolic testing and program mutation testing by giving examples. 8

5. (a) What is Debugging ? Explain various debugging tools in detail. 8

(b) What is software design process ? Explain various design strategies in detail. 8

SECTION – C

6. (a) What is Object Oriented Testing ? Explain various OOT strategies and issues in detail. 8

(b) What is Testing Tool ? Explain various dynamic testing tools in detail. 8

7. Explain the following in detail by giving suitable examples : 16

(a) Metrics for analysis and design

(b) Test data generators

7. (a) Define filter and its usage. Explain different filter commands in UNIX. 10

(b) Write advantages of file compression in UNIX. How compression can be performed in UNIX. 6

UNIT – IV

8. (a) Describe various tasks performed by system administrator. 8

(b) Differentiate between LINUX and UNIX. 8

9. What is shell programming ? State & compare different types of shells in detail. 16

(b) Explain Phong's shading method for smooth shading. 8

UNIT – IV

8. (a) Explain principles of animation and how we can perform animation by computer ? 8

(b) Explain MIDI versus Digital audio and also write the advantages and disadvantages of MIDI over digital audio. 8

9. (a) Explain the five elements of Multimedia Systems. 8

(b) Discuss the important considerations in using digital video in multimedia. Describe the basics of video recording and how its related to multimedia production ? 8

7. (a) Explain sliding window protocol with the help of diagram. 8

(b) Compare and contrast switched Ethernet and fast Ethernet in detail. 8

UNIT – IV

8. (a) What is cell switching ? Why it is needed ? What are its features ? Explain. 8

(b) Explain Client server environment in detail. Also write its merits. 8

9. (a) Explain various network devices in detail with their merits and demerits. 8

(b) Explain TCP/IP protocol architecture with the help of diagram. 8

Q7.

a) Write down the matrix representation for compound transformation including translation, rotation and scaling

b) How is a window transformed on a viewport using two dimensional viewing transformations? Explain

Unit 4

Q8.

a) What is Animation? How Animation are classified? What is the importance of animation in multimedia? Explain.

b) Explain the concept of Authoring Process and Tools in detail.

Q 9. Explain the following in detail with Example:

a) HyperMedia and Hyper Graphics.

b) Multimedia software and components of multimedia.

c) What is the importance of MATLAB in Graphics Application

Paper Code 3141/3150
Nomenclature: Computer Graphics and ...media Techniques

Paper MCA-301

Max Marks 80

Time 3Hrs

Q.No.1

a) What are Features of Matlab?
b) How will you clip a point?
c) What is the necessity of 3D ...ng used for multimedia application?
d) What type of software te...ection.
e) Explain the term shear ...
f) What is identity matrix?
g) Define 2D rotation.
h) What do you mean by output primitives?
i) What are the ways to perform image annotation?
j) Color and Grayscale levels

Unit 1

Q.No.2.

a) Describe the Shadow mask method for color CRT display with diagram.
b) What do you mean by raster scan systems? What are their characteristics? How are these systems different from random scan systems? Illustrate.

Q.No.3.

a) Explain various hard copy devices with its characteristics and uses.
b) How Non-Emissive Displays works? Explain
c) What is work Station? What is the importance of work Station in CG

Unit 2

Q.No.4.

a) What steps are required to plot a line whose slope is between O and 30° using Bresenham's method? Indicate which raster locations would be chosen by Bresenham's algorithm when scan-converting a line from screen coordinate (2, 4) to screen coordinate (7, 12).
b) Explain the Following : (i) Cell Array (ii) Character Generation

Q.No 5.

a) Define Boundary fill algorithm with the help of example? Also differentiate it with Flood fill algorithm.
b) What is anti-aliasing? How is it useful? Explain the reasons of aliasing in Computer Graphics and explain the minimization or removing of aliasing in detail.

Q6.

Unit 3

a) Find the normalization transformation that maps a window whose lower left corner is at (2, 3) and upper right corner is at (7, 10) onto:
   (i) A viewport that is the entire normalized device screen and
   (ii) A viewport that has lower left corner at (0, 0) and upper right corner (1/2, 1/2).
b) What is Cyrus-Beck Line Clipping algorithm? What is the importance of clipping algorithm? Illustrate through a suitable example.

UNIT – IV

8. (a) What do you mean by switching ? Explain different types of switching in detail. 10

(b) Write a short note on : 6

(i) WWW

(ii) FTP

9. Explain :

(a) Functions of Network Layer and Routing Algorithms. 10

(b) Causes of Congestion and methods to control it. 6

Roll No. .....

32445

MCA 3rd Semester

Examination – December, 2018

JAVA PROGRAMMING

Paper : MCA - 305

Time : Three hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all. Question No. **1** is ***compulsory***. Attempt any ***four*** questions by selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) How Java is called Architecture-Neutral programming ?

(b) Give the output of following program :

```
class Output {
public static void main (String args[])
{int a = 1, b = 2, c = 3;
a = 4; b >>= 1; c <<= 1;
System. out. println (a + " " + b + " " + c);}}
```

P. T. O.

(c) Mention the differences between throw and throws in exception handling.

(d) How user defined exceptions are created in Java ?

(e) What is thread priority in Java ?

(f) What is the difference between Java applets and Java application programs ?

(g) Difference between panel and frame window in Java.

(h) Explain paint mode in the Java ? $2 \times 8 = 16$

UNIT – I

2. What do you mean by Object Oriented language ? How it differs from procedure oriented language ? Explain History and Development of Java as Object Oriented Programming language. 16

3. (a) What is Java Class Library ? How to create class, object and method ? 8

(b) Explain automatic garbage collection and control statement in Java. 8

UNIT – II

4. (a) Explain advantages of various types of polymorphism in Java. 8

(b) How to achieve multiple inheritances in Java ? Explain various issues arising in it with suitable examples. 8

5. (a) What are exceptions ? Explain the user defined exceptions and system defined exceptions with suitable examples. 10

(b) What is abstract class ? Illustrate through suitable example. 6

UNIT – III

6. (a) What is stream in Java ? Write a program in to count the total byte of file. 10

(b) What is serialization ? Explain it with help of example. 6

7. What is an apple and explain the life cycle of applet with diagram ? Explain the inbuilt function used in applet life cycle with its syntax. 16

UNIT – IV

8. (a) Explain Canvas and Scrollbar components of AWT with suitable examples. 8

(b) Write a program to create window using frame and display text and one button on it. 8

9. (a) What are Layout Managers ? Differentiate between Border and Grid Layout with a programming example each. 8

(b) Write short notes on the following : 4 + 4 = 8

(i) Graphics class

(ii) Window fundamental

Roll No. .....

32444

MCA 3rd Semester

Examination – December, 2018

DATA COMMUNICATION & COMPUTER NETWORKS

Paper : MCA-304

Time : Three hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question **1** is ***compulsory***. Attempt ***one*** question from Unit **I** to Unit **IV**. In all, ***five*** questions are to be answered. All questions carry equal marks.

1. Explain the following : $8 \times 2 = 16$

(a) Bit rate vs. Baud rate.

(b) Piggybacking.

(c) Synchronous vs. Asynchronous Transmission.

(d) Broadband vs. Baseband Transmission.

P. T. O.

UNIT – III

6. What are B-spline curves ? Explain the use of these curves in computer graphics.

7. Explain the A - Buffer Algorithm in detail.

UNIT – IV

8. Explain the various multimedia software in detail.

9. What is animation ? Explain the process of animation in detail.

(b) Write Note on :

(i) Frame Relay 5

(ii) Point to Point vs. Multipoint Connection 2

5. (a) Define OSI Reference Model and its layered architecture with its principles and functioning of each layer in detail. 12

(b) Differentiate between OSI Reference Model and TCP/IP Reference Model. 4

UNIT – III

6. State IEEE standards for :

(a) Ethernet 8

(b) Token ring 8

7. Explain the following :

(a) DLL Framing 4

(b) Sliding window protocol for flow control 6

(c) Selective Repeat ARQ vs. Go back n 6

(e) Full Duplex vs. half Duplex Mode of Communication.

(f) Optimality principle in Routing.

(g) Phase Shift.

(h) Frequency.

UNIT – I

2. (a) What do you mean by Data Communication ? Define features of Communication System along with its detailed Diagram. 8

(b) Define the Line Coding Techniques of Digital to Digital Conversion. 8

3. (a) Define process of Analog to Digital Conversion. 8

(b) Describe Hamming Codes for Error-Correction. 8

UNIT – II

4. (a) What is Network ? State various categories of network and criteria for choosing a Network. 9

12453

M.C.A. (1st Semester)

(Regular/Re-appear/Imp.)

Examination-2022

COMPUTER NETWORKS

PAPER : MCA-2103

Time : 3 Hours **Max. Marks : 80**

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after examination.

Note: Attempt **Five** questions in all, Question No. 1 is compulsory. All questions carry equal marks.

1. Explain the following: 8×2=16

   (a) Name the basic components of data communication

   (b) Half-duplex vs simplex data flow

   (c) Internet vs. Intranet

   (d) Bandwidth of a signal

   (e) Frequency of data

(f) Phase modulation

(g) Hub vs switch

(h) Repeater

2. (a) State different line coding schemes and their demerits. 10

(b) Describe asynchronous and synchronous modes of transmission. 6

3. (a) What is multiplexing? Explain its advantages. Differentiate between FDM and TDM. 8

(b) What is transmission medium? Explain the wireless transmission methods with advantages. 8

4. (a) Define network and its criteria. Explain star topology and bus topology with limitations. 6

(b) Write a short note on frame relay. 6

(c) Describe farming vs. packetizing. 4

5. Explain the following:

(a) ISDN 7

(b) TCP/IP protocol suite 5

(c) X.25 4

Roll No. .....

32441

MCA 3rd Semester

Examination – December, 2018

COMPUTER GRAPHICS & MULTIMEDIA

Paper : MCA-301

Time : Three hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. **1** is ***compulsory*** and attempts ***four*** more questions selecting ***one*** question from each Unit. All questions carry equal marks.

1. Write the short note on the following :

(a) What is Raster scan ?

(b) What is flood fill algorithm ?

P. T. O.

(c) What is frame buffer ?

(d) Explain parallel projection.

(e) Discuss aspect ratio.

(f) Explain pix map.

(g) What is line clipping ?

(h) What do you mean by scan conversion ?

UNIT – I

2. What is computer graphics ? Explain its different uses.

3. Write the DDA line drawing algorithm.

UNIT – II

4. Explain the reflection and shearing in 3 -dimensional geometric transformation.

5. What do you mean by projection ? Explain the various types of perspective projection in detail.

6. Write notes on the following :

(a) HDLC 6

(b) Standard Ethernet 5

(c) Sliding window protocol 5

7. (a) Define the significance of shortest path algorithm and its process. 8

(b) Differentiate between CSMA/CD and CSMA/CA. 8

8. Explain the following:

(a) Cell switching 8

(b) TCP and UDP 5

(c) Router vs. Gateways 3

9. (a) Explain packet switching and message switching methods. 6

(b) Describe DNS. 3

(c) State and explain congestion control methods. 7

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12453

M.C.A. (1st Semester)

(Regular/Re-appear/Imp.)

Examination-2022

COMPUTER NETWORKS

PAPER : MCA-2103

Time : 3 Hours **Max. Marks : 80**

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after examination.

Note: Attempt **Five** questions in all, Question No. 1 is compulsory. All questions carry equal marks.

1. Explain the following: 8×2=16

   (a) Name the basic components of data communication

   (b) Half-duplex vs simplex data flow

   (c) Internet vs. Intranet

   (d) Bandwidth of a signal

   (e) Frequency of data

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