

PGIIS-O-814A-21
M.Sc III Semester Degree Examination
COMPUTER SCIENCE
Programming in JAVA
Paper : HCT 3.1
(Old Syllabus)

Time : 3 Hours**Maximum Marks : 80****Instructions to Candidates:**

- 1) **Section -A** is Compulsory
- 2) Answer any Five questions from **Section-B**

SECTION -A

Answer the following questions.

(10×2=20)

1.
 - a) What is Exception Handling?
 - b) Write Java code for Switch statement.
 - c) What is the use of “this” keyword?
 - d) Define constructor.
 - e) What is thread?
 - f) Define the term polymorphism.
 - g) What is hierarchical inheritance?
 - h) Explain Event listener
 - i) Define Streams.
 - j) What are network classes ?

SECTION -B

2.
 - a) Design a Simple Applet. **(6)**
 - b) Describe the steps to create package. **(6)**
3.
 - a) What is java Swing ? How swing classes are better than AWT ? **(6)**
 - b) Write a program on collection classes **(6)**
4.
 - a) Explain Tabbed and scrolled panes with example. **(6)**
 - b) Write a program for Arithmetic Exception in exception **(6)**

5. a) Explain the use of super keyword (6)
b) Write a program for Method overriding. (6)
6. a) Write a program for database connectivity (Use JDBC-ODBC type) (6)
b) Explain the Thread Life Cycle. (6)
7. a) Create simple RMI Application. (6)
b) List the Event Listeners and explain any Two. (6)
8. Write notes on any **Two** of the following (2×6=12)
a) AWT
b) Final Classes and Variables
c) Socket Programming
d) Event Delegation Model.
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PGIIS-N-819 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
E-Commerce
Paper : OET 3.1
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) **Section- A is Compulsory.**
- 2) Answer any **Five** questions from **Section - B**

SECTION -A

1. a) What is an e-commerce framework? (10×2=20)
- b) List the major benefits of e-commerce
- c) State the challenges of e-commerce in India.
- d) What is network infrastructure?
- e) What is Internet?
- f) List the layers in TCP/IP.
- g) What is e business enterprise?
- h) What is Translation parties?
- i) What is electronic cash?
- j) Write the benefits of EDI.

SECTION -B

2. a) Briefly discuss Evolution of E-Commerce (6)
- b) Explain e-commerce cutting edge (6)

3. a) Write the disadvantages of e-commerce. (6)
b) Explain Major challenges faced by E-commerce in India. (6)
4. a) Briefly discuss basic blocks of e-commerce. (6)
b) Write the functions of network layer. (6)
5. a) Briefly discuss internet hierarchy. (6)
b) Explain Server operating system. (6)
6. a) Compare Conventional Design and e-organisation. (6)
b) Briefly discuss e-commerce Sales Life Cycle (ESLC) Model. (6)
7. a) Discuss risks in Electronic payment system. (6)
b) Explain the working of Electronic Data Interchange (EDI). (6)
8. Write notes on any **Two** of the following (2×6=12)
a) Roadmap of e-commerce in India.
b) E-commerce infrastructure.
c) E-commerce process model.
d) Internet Marketing Techniques.
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PGIIS-N-816 A-21
M.Sc III Semester Degree Examination
COMPUTER SCIENCE
Data Science
Paper : SCT3.1
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Section- A is Compulsory.
- 2) Answer any **five** questions from Section - B

SECTION -A

Answer the following questions.

(10×2=20)

1.
 - a) What is data warehouse metadata?
 - b) How do you clean the data?
 - c) What is an outlier?
 - d) What is transactional database?
 - e) What is a pattern in data mining?
 - f) How does tree pruning work?
 - g) What is dimensionality reduction?
 - h) Define a time series analysis
 - i) Write the data integration process.
 - j) What is a misclassification

SECTION -B

2.
 - a) What is a knowledge discovery? Explain the KDD process. **(6)**
 - b) Write the Characteristics of the data Warehouse. **(6)**

3. a) Describe classification of the data mining systems. (6)
b) Write the major issues in data mining. (6)
4. a) Explain the market basket analysis problem with example. (6)
b) What is a constraint-based association mining? (6)
5. a) Explain decision tree induction based classification scheme. (6)
b) Illustrate Bays method of the classification. (6)
6. a) What is clustering? Explain partitioning method of clustering. (6)
b) Describe the hierarchical methods of clustering. (6)
7. a) How do you improve the classification accuracy? Explain. (6)
b) What is complex data type mining ? Explain. (6)
8. Write notes on any **two** of the following (2×6=12)
a) Support and confidence
b) Density based clustering method
c) Data cleaning
d) Trends in data mining
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PGIIS-O-817 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
Computer Graphics
Paper : SCT 3.1
(Old Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Section- A is **Compulsory**.
- 2) Answer any **Five** questions from Section - B

SECTION -A

Answer the following questions.

(10×2=20)

1. a) What is computer Graphics? List out the applications of Computer Graphics.
- b) What is sample raster graphics package? Write its uses.
- c) List out the Basic raster graphics algorithms for drawing 2D lines
- d) What do you mean by antialiasing?
- e) What is Transformation?
- f) What are the Raster methods for transformation?
- g) How can a 3D objects can be created in Computer Graphics.
- h) What is Depth Cueing? List the methods of Depth Cueing?
- i) What is the principle of Painter's Algorithm?
- j) What do you mean by face removal algorithm?

SECTION -B

Answer any **FIVE** questions of the following.

2. a) With a neat diagram and explain the components of graphic system. **(6)**
- b) Explain the hardware and software required for the graphics system. **(6)**

3. a) Rasterise a line from (0,0) to (8,4) Using DDA Algorithm. (6)
b) Explain with suitable diagram different method for seed point inside the test for polygon. (6)
4. a) Explain the various two dimensional viewing function for working with window and viewport. (6)
b) Discuss following 3-D transformation. A) Reflection B) Shear. (6)
5. a) Explain the BSP tree method for visible surface detection. (6)
b) Explain polygon table representation for two adjacent polygon surfaces formed with six edges and five vertices. (6)
6. a) Differentiate between the object space and the image space hidden surface algorithms. (6)
b) Describe the Z-buffer method. What are the situations where the Z-buffer method gives more efficient results? (6)
7. a) Describe the PHIGS Primitives and attributes. (6)
b) What is the difference between raster and vector file formats? List some of the raster file formats you know. (6)
8. Write short notes on any **two** of the following (2×6=12)
a) Polygons
b) Quadric surfaces
c) Achromatic and colored light
d) Octrees and curved surfaces

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PGIIS-N-813 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
Advanced Java
Paper : HCT - 3.1
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Section- A is **Compulsory**.
- 2) Answer any **five** questions from Section - B

SECTION-A

Answer the following questions.

(10×2=20)

1.
 - a) Java is Platform independent. Justify.
 - b) How is an object of a class created? Give an example.
 - c) What is an final class? Why is it required?
 - d) What is multithreading?
 - e) What are streams?
 - f) Differentiate between AWT and Swing classes.
 - g) Why are labels and buttons used?
 - h) What is a Servlet?
 - i) What is a Swing?
 - j) Define Java bean?

SECTION-B

2.
 - a) Explain in detail how Java works? **(6)**
 - b) Design a class by name measure with member data feet and inches and provide the functionalities for input and output operations and also for adding two objects of measure class(adding two measurements). **(6)**

3. a) Illustrate hierarchical inheritance with an example program. (6)
b) How are exceptions handled in JAVA? Explain in detail. (6)
4. a) Give an account of Java thread model. (6)
b) Write a Java program to create a file consisting of bytes and display its contents. (6)
5. a) What is synchronization? How is it achieved? Illustrate. (6)
b) Discuss java supports networking facility. (6)
6. a) What are AWT controls? Explain any two in detail. (6)
b) Describe Delegation Event Model. (6)
7. a) What is a Java bean? How is bean customization accomplished? (6)
b) Give an account of the life cycle of a Servlet. (6)
8. Write notes on any **two** of the following (2×6=12)
a) Abstract Class.
b) Runnable Interface.
c) Byte code Interpretation.
d) JAR File.
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PGIIS-N-815 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
Software Engineering
Paper : HCT 3.2
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) Section A is Compulsory.
- 2) Answer any **Five** questions from Section-B.

SECTION - A

Answer the following questions.

(10×2=20)

1.
 - a) Define Software.
 - b) What is requirement Engineering?
 - c) List the Software Application Domain.
 - d) What are the characteristics of good software design?
 - e) Define the term verification and validation.
 - f) What is Module cohesion.
 - g) Define Testability.
 - h) What is Database Testing?
 - i) Why reusable software resources are required?
 - j) Mention the various SPI frame work.

SECTION - B

2.
 - a) Describe the General principles that focus on Software Engineering practice as a whole. (6)
 - b) Explain the Water fall model with neat diagram. (6)

3. a) Draw UML use case diagram for Safe home Home security function. (6)
b) What is Evolutionary process model? Explain the spiral model. (6)
4. a) What are the different types of coupling that can exist between different modules. (6)
b) Illustrate the basic mechanism used in object oriented design. (6)
5. a) Describe the unit testing procedure. (6)
b) What are the steps involved in Software Testing. (6)
6. a) What are the server side and client side issues of Configuration Testing. (6)
b) Explain Graph Matrices. (6)
7. a) Describe the software project estimation process (6)
b) Explain COCOMOII Model. (6)
8. Write short notes on any **Two** of the following: (2×6=12)
a) The concurrent Model (6)
b) Deployment Testing (6)
c) Flow Graph Notation (6)
d) CMMI (6)
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PGIIS-N-818 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
Computer Graphics
Paper : SCT 3.2
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) **Section- A is Compulsory.**
- 2) Answer any **five** questions from **Section - B**

SECTION -A

Answer the following questions.

(10×2=20)

1.
 - a) What are CAD methods?
 - b) List the differences between computer graphics and image processing.
 - c) Where video controllers are used? What are its components?
 - d) Write the expression for slope in line drawing algorithm.
 - e) List Properties of circle.
 - f) What is general curve function?
 - g) What is rigid body transformation?
 - h) Write the steps in general pivot-point rotation.
 - i) Differentiate between primary and complimentary colors.
 - j) Draw unit cube showing the CMY and RGB color models.

SECTION -B

2.
 - a) Discuss the role of computer graphics in fine art and commercial art. **(6)**
 - b) What is visualization? Describe different visualization applications. **(6)**

3. a) Explain construction and working of refresh cathode-ray tubes. (6)
- b) What are the different flat panel display devices? Discuss them. (6)
4. a) Draw a line using Bresenham line drawing algorithm from (1,1) to (8,5). (6)
- b) Write midpoint ellipse algorithm. (6)
5. a) Discuss line color attribute in detail. (6)
- b) What is color table? What are its content? Where it is used? Explain with an example. (6)
6. a) Consider a square with points A(0,0), B(4,0), C(4,4), D(0,4) on which apply T1 (scaling transformation) given scaling factor is $S_x = S_y = 0.5$ and then apply T2 (rotation transformation in clockwise direction) it by 90° , in last perform T3 (reflection transformation about origin). (6)
- b) Describe reflection transformation. (6)
7. a) Describe the YIQ color model. (6)
- b) Explain the design of animation sequence. (6)
8. Write notes on any **two** of the following (2×6=12)
 - a) Digitizers.
 - b) Gray scale levels.
 - c) Transformation functions.
 - d) Morphing.

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PGIIS-O-816 A-21
M.Sc III Semester Degree Examination
COMPUTER SCIENCE
Data Communications And Computer Networks
Paper : HCT 3.2
(Old Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) **Section- A is Compulsory.**
- 2) Answer any **Five** questions from **Section - B**

SECTION -A

Answer the following questions.

(10×2=20)

1.
 - a) Define Data communication.
 - b) Define Internetworking
 - c) List the functionalities provided by routers.
 - d) Differentiate between frames and packets.
 - e) Mention the advantages of Repeater.
 - f) List different types of Network.
 - g) What is prefix?
 - h) Mention the need for domain name space.
 - i) List the functionalities of FTP.
 - j) What is Digital signature?

SECTION -B

2.
 - a) Define Topology. Discuss ring topology and Tree topology. **(6)**
 - b) Discuss ISO/OSI layered model. **(6)**

3. a) Compare twisted pair cable with Fibre optic cable. (6)
b) Explain CRC with suitable example. (6)
4. a) Explain sliding window protocol. (6)
b) Briefly discuss error detection and correction technique. (6)
5. a) Explain Packet Switching and datagram approach. (6)
b) Distinguish between distance vector routing and link state routing algorithm. (6)
6. a) Explain briefly Transmission Control Protocol. (6)
b) Explain Congestion control in detail. (6)
7. a) Explain the use of SMTP to transfer e-mail messages in Internet. (6)
b) Explain the procedure of cryptography used in network. (6)
8. Write notes on Any **Two** of the following (2×6=12)
a) Hamming code.
b) IP addressing methods.
c) Working of WWW.
d) Network Security.
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PGIIS-N-821 A-21
M.Sc. III Semester Degree Examination
COMPUTER SCIENCE
Information Security and Cyber Laws
Paper : OET 3.2
(New Syllabus)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

- 1) **Section A** is Compulsory.
- 2) Answer any **Five** Questions from **Section-B**.

SECTION - A

Answer the following questions.

(10×2=20)

1.
 - a) Show that the Computer Network as a Threat.
 - b) What is Hardware Vulnerability?
 - c) What is Computer Network?
 - d) What are the tools of the attacker?
 - e) Define Scanning and spoofing.
 - f) What is session hijacking?
 - g) Define Attack and Cryptography.
 - h) Define Steganography.
 - i) Define Electronic Signature.
 - j) What is the punishment for sending offensive messages.

SECTION - B

2.
 - a) Explain the importance of Data Security. **(6)**
 - b) Explain the Software Vulnerabilities. **(6)**
3.
 - a) Explain the Digital Crime. **(6)**
 - b) Explain the Criminology of Computer Crime. **(6)**

4. a) Explain internal versus external threat. (6)
b) Explain Security Assurance. (6)
5. a) Discuss the Key Principles of Conventional Computer Security. (6)
b) Explain Authentication and access control (6)
6. a) Explain Public Key Cryptography & Private Key Cryptography. (6)
b) Explain the ethics of Hacking and Cracking. (6)
7. a) Explain the Section 43 as per IT 2008 Cyber Law. (6)
b) Explain the punishments for dishonestly receiving computer resources as per cyber law. (6)
8. Write notes on any **Two** of the following: (2×6=12)
a) Hacking (6)
b) Password Cracking (6)
c) Unix/Linux Security (6)
d) Section 65 of cyber law as per IT 2008 (6)
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(OR)

- c) Define primary structure of protein. How primary structure of protein determined using chemical method? Mention any one common method used with reaction.
3. a) How is the nature and position of side chain in cholesterol established? (5+5+6=16)
- b) Write briefly on the irradiation products of ergosterol.
- c) How do you bring about the following transformations?
- i) Diosgenin → progesterone.
- ii) Cholesterol → testosterone.

(OR)

- c) Write short notes on:
- i) Saponins and steroidal alkaloids.
- ii) Barbier-Wieland degradation in structure elucidation of alkaloids.
4. a) Write an account of general methods of structure elucidation and terpenes. (5+5+6=16)
- b) Describe the chemistry of yohimbine.
- c) How the structure of abietic acid is established by chemical degradation studies and synthesis?

(OR)

- c) Give the synthesis of camphor and quinine.
5. a) Describe the biosynthesis of monoterpenes. (5+5+6=16)
- b) Discuss the biogenesis of disaccharide.
- c) Outline the steps involved in the biosynthesis of cholesterol.

(OR)

- c) Describe the biosynthesis of indole alkaloids.
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