

E. E. E. 2025

OBJECT ORIENTED PROGRAMMING IN JAVA

CSE-505

Full Mark : 75 SCTE/NGL/R-2025-I

Pass Mark : 30

Time : 3 Hours

A. Multiple choice questions.

(1 x 10=10)

1. Which feature of Java allows running the same program on different platforms?
 - a) Object-oriented
 - b) Encapsulation
 - c) Portability
 - d) Robustness
2. The .class file generated after compilation is a
 - a) Machine code
 - b) Source code
 - c) Assembly code
 - d) Bytecode
3. Which of the following is a valid variable name in java.
 - a) _value
 - b) lvalue
 - c) @value
 - d) #value
4. An object in java is
 - a) An instance of a class
 - b) A keyword
 - c) A block of memory
 - d) A method
5. The method called by JVM before destroying an object is
 - a) delete()
 - b) finalize()
 - c) destroy()
 - d) free()
6. If an exception is not caught in a Java program, then
 - a) The exception is ignored.
 - b) The program terminates abnormally
 - c) The program continues normally
 - d) Compile time error
7. Default priority of a thread is
 - a) 0
 - b) 1
 - c) 5
 - d) 10
8. If thread T1 calls T2.join(), what happens?
 - a) T1 executes immediately
 - b) T2 is terminated
 - c) T1 waits until T2 completes
 - d) Compilation error

9. AWT stands for:
- a) Advanced Window Toolkit
 - b) Abstract Window Toolkit
 - c) Applet Window Toolkit
 - d) Applied Window Toolkit
10. Which listener interface handles checkboxes and list selections?
- a) ItemListener
 - b) KeyListener
 - c) WindowListener
 - d) ActionListener

B. Answer the following questions in brief. (2 X 17=34)

1. Explain in brief the functions of Java Virtual Machine (JVM).
2. Write a program that takes an integer and checks if it is even or odd using an if-else statement.
3. Define class in java and write the syntax of a class.
4. Give the difference between public and protected access modifiers.
5. Explain the charAt () method in Java String class with example.
6. Define boxing and unboxing.
7. Write a program to convert a given string to uppercase.
8. Define inheritance and write the syntax of inheritance.
9. Differentiate between checked and unchecked exceptions.
10. Write the syntax of try-catch-finally block.
11. Explain the role of throws keyword in method declarations with example.
12. Name and briefly explain the two ways of creating a thread in java.
13. Explain the purpose of stop () method in Java applet and when it is called.
14. Differentiate between paint() and repaint () method in java applet.
15. Explain the use of the drawString() method in an applet and write the syntax of drawString().
16. Define the Event Delegation Model.
17. Differentiate between a container and a component.

C. Answer the following questions in details.

1. Which character encoding system does java use? Differentiate between break and continue statement. (1+2)
2. Write a program to demonstrate how to use a parameterized constructor to initialize an object. (3)
3. Write a program using **super** to access parent class variables hidden by child class variables. (4)
4. Explain why Java does not support multiple inheritance with classes. How can the issues caused by multiple inheritance be resolved in Java? (2+2)
5. Write a Java program that catches an ArithmeticException when dividing a number by zero. (3)
6. Explain the lifecycle of thread with a neat diagram. (3)
7. Write a Java program that creates and runs two threads using the Runnable interface. (3)
8. Write a program that uses getParameter() to read a user name and display it. (4)
9. Write a program to create a simple AWT Applet with a label and a button. (4)

SOFTWARE ENGINEERING

CSE-401

Full Marks : 75 SCTE/NGL/R-2025-I

Pass Marks : 30

Duration : 3 Hours

A. Multiple Choice Questions:

(1x10=10)

1. In the Spiral model, what is the most important feature?
 - A. Efficiency management
 - B. Risk management
 - C. Quality management
 - D. Time management
2. Software reliability is defined with respect to
 - A. quality
 - B. failures
 - C. Time
 - D. bugs
3. When can white-box testing be started?
 - A. After Designing
 - B. After Coding
 - C. After SRS creation
 - D. After installing
4. By whom is unit testing done?
 - A. User
 - B. Customer
 - C. Developer
 - D. All the above
5. In Software Development Life Cycle, documentation is prepared at
 - A. analysis phase
 - B. design phase
 - C. development phase
 - D. every phase
6. What is the primary goal of project management?
 - A. To satisfy all stakeholders
 - B. To maximize profits
 - C. To ensure the project is the most innovative
 - D. To complete the project on time and within budget
7. What is a Gantt chart used for in project management?
 - A. Resource allocation
 - B. Budget planning
 - C. Scheduling tasks & tracking progress
 - D. Risk management

8. What is software project scope?
 - A. The project's timeline
 - B. The project's budget
 - C. The project's risk management plan
 - D. The project's goals and deliverables
9. Why is communication important in project management?
 - A. To reduce project costs
 - B. To ensure transparency and collaboration among stakeholders
 - C. To avoid project delays
 - D. To limit task documentation
10. What does the term 'project deliverables' refer to?
 - A. The project's financial budget
 - B. The time allocated for each task
 - C. The resources needed for the project
 - D. The end results or outputs of the project

B. Answer the following in short:

(2x10=20)

1. What do you understand by the term "Software engineering"?
2. What is object oriented analysis?
3. What is data modelling?
4. What is software reliability?
5. Define "abstraction" in software design.
6. Write any two points on why project has to be terminated.
7. Differentiate between error and bug.
8. What is risk analysis in software project management?
9. Differentiate between Black box testing and White box testing.
10. What is PERT?

C. Descriptive questions:

(5x9=45)

1. Explain any one of the SDLC model. Give one advantage and one disadvantage.
2. Write short notes on software documentation.

3. Describe object oriented analysis in details.
4. Explain the concept of object oriented design.
5. Explain in details software reliability models.
6. Describe software project scheduling.
7. Distinguish between Verification and Validation.
8. What is project monitoring? Explain in details.
9. What is project estimation? Explain how project estimation is done.

INTERNETWORKING AND WEB TECHNOLOGY

CSE-506

Full Mark : 75 SCTE/NGL/R-2025-I

Pass Mark : 30

Time : 3 Hours

I. Multiple Choice Questions

(14x1=14)

1. Select the organization that is responsible for Internet standardization.
a) ISO b) IEEE c) IETF d) NASSCOM
2. Identify the protocol that provides a connection-oriented service.
a) UDP b) IP c) TCP d) ARP
3. Choose the option that is not a factor when selecting an Internet Service Provider (ISP).
a) Bandwidth b) Modem speed
c) Number of switches d) Cost
4. Recall which layer in the TCP/IP model corresponds to the Transport Layer of the OSI model.
a) Host-to-Host b) Internet
c) Application d) Network Interface
5. Identify the protocol used to send e-mails from a client to a mail server.
a) POP3 b) IMAP c) SMTP d) FTP
6. Choose the correct expansion of FTP.
a) File Transfer Process b) File Transmission Protocol
c) File Transfer Protocol d) File Transport Procedure
7. Which option represents a cyber security threat.
a) Encryption b) Phishing
c) Firewall d) Authentication
8. Identify the device used for Inter-VLAN Routing.
a) Router b) Hub c) Switch d) Repeater

9. The purpose of the DHCP protocol is
- a) Assigning IP address
 - b) File transfer
 - c) Mail delivery
 - d) Network security
10. Recall the IEEE standard that defines Wireless LAN
- a) 802.3
 - b) 802.5
 - c) 802.11
 - d) 802.15
11. Identify the function of a search engine index.
- a) To store user passwords
 - b) To map keywords to web pages
 - c) To encrypt data
 - d) To resolve IP addresses
12. Which field is not part of an IP header?
- a) Source Address
 - b) Destination Address
 - c) Protocol Number
 - d) MAC
13. Recognize the method used to connect multiple VLANs.
- a) VLAN Tagging
 - b) Port Mirroring
 - c) IP Subnetting
 - d) NAT
14. Identify the protocol that helps prevent switching loops in a Layer 2 network?
- a) DHCP
 - b) STP
 - c) DNS
 - d) FTP

II. Short Answer Question

(10x2=20)

1. List any two major differences between TCP and UDP
2. State two main functions of an Internet Service Provider.
3. Describe the role of subnet mask in IP addressing.
4. Mention two advantages of using a leased line for Internet connectivity.
5. Explain the importance of a firewall in a network.
6. Identify the role of a switch within a LAN
7. Identify any four popular search engines.
8. List any two protocols used in switch management.
9. Explain the terms Encryption and Decryption.
10. Justify the need for internetworking.

III. Answer the following Question

(7x3=21)

1. Explain the various components of a UDP message.
2. Describe how emails are routed in POP3 and IMAP.
3. Differentiate between direct and indirect delivery in IP routing.
4. Discuss the different types of FTP servers.
5. Illustrate any three common cyber threats and suggest suitable preventive measures.
6. Explain the functions of DHCP, STP and QoS in a network infrastructure.
7. Demonstrate the steps to register a website in a search engine.

IV. Long Answer Question

(5x4=20)

1. Explain in detail the functions of the control flags in a TCP Segments. Justify their importance.
2. Describe the structure of an IP header and discuss the significance of any four key fields
3. Demonstrate how IDS and IPS firewalls help in detecting and preventing security breaches.
4. Illustrate the process of router configuration and justify the importance of routing protocols for efficient network communication.
5. Demonstrate how wireless access points can be managed effectively through a Wireless LAN Controller (WLC) and explain how this setup improves performance and security.

BUSINESS DATA PROCESSING
CSE/CPE/IT-513 Comp-2024 June

Full Mark : 75

Pass Mark : 30

Time : 3 Hrs.

A. Multiple Choose Questions: (1x17=17)

1. An MIS information comes from the _____.
A. Internal source B. External source
B. Both Internal & External source D. None of these
2. A back-bone of organization is its
A. Information system B. Source system
C. Management system D. None of these
3. A TPS is commonly known as
A. Train processing system B. Transaction processing system
C. Train presentation system D. None of these
4. A basic component of DSS is _____.
A. Database B. An application software for DSS
C. Model D. All of these
5. An important characteristic of effective and useful information is/are _____.
A. Accuracy B. Timeliness
B. Completeness D. All of these
6. _____ can be define as a raw material includes numbers, facts, figures and symbols with no context.
A. Data B. Information C. Knowledge D. All of these
7. In a firm the reports are generated under condition is called _____ reports.
A. conditions B. standard C. exception D. Periodic
8. Data redundancy occurs when the same data exist in _____.
A. One B. Multiple C. No D. None of these
9. The ability to fine an individual item in a file immediately
A. Sequential access B. File allocation
C. Direct access D. Directory

4. List the major functions of personnel management.
5. Write the four activities performed by an IS?
6. Differentiate between DSS and EIS.

IV. Descriptive type questions: (6x4=24)

1. Describe the responsibility of personnel management or differentiate between sales and marketing.
2. What is MIS report? What is the need of MIS report in today's business world?
3. Discuss briefly the benefits of using an inventory management system in business.
4. Explain in detail the role of TPS in business processing.

WEB PAGE DESIGN II

CSE/CPE-503

Full Mark : 75 SCTE/NGL/R-2024-I

Pass Mark : 30

Time : 3 Hours

I. Choose the correct options: -

1x10=10

1. Which of the following is/are correct about PHP?
 - a) PHP scripts are executed on the server
 - b) PHP is free to download and use
 - c) PHP is an acronym for "PHP: Hypertext Preprocessor"
 - d) All of the above
2. PHP files can contain
 - a) HTML
 - b) CSS
 - c) JavaScript
 - d) All three
3. Which of the following is the default file extension of PHP?
 - a) .php
 - b) .hphp
 - c) .xml
 - d) .html
4. PHP statements are terminated with
 - a) : (Colon)
 - b) ; (Semi-colon)
 - c) . (Period)
 - d) ! (Exclamation mark)
5. Which of the following is not a variable scope in PHP?
 - a) Extern
 - b) Local
 - c) Static
 - d) Global
6. Which of the following is used for multiplication in PHP?
 - a) + (Plus)
 - b) * (Asterisk)
 - c) . (Dot)
 - d) \$ (Dollar)
7. Which of the following function is used to sort an array in ascending order?
 - a) *sort()*
 - b) *asort()*
 - c) *dsort()*
 - d) *rsort()*
8. What does 'i' in *mysqli* stand for?
 - a) Improved
 - b) Information
 - c) Inline
 - d) Integer
9. String values in PHP must be enclosed within
 - a) Double Quotes
 - b) Single Quotes
 - c) Both (a) and (b)
 - d) None of the above

10. Which of the following is the correct way to perform post increment on a variable in PHP?
- a) ++\$x b) \$x++ c) --\$x d) \$x--

II. Answer the following questions:

1. Write the rules for PHP variables. 2
2. List the data types supported in PHP. Explain any three of them. 5
3. Explain any three from the following loop statements in PHP with example. 4
 - i) *for* loop
 - ii) *foreach* loop
 - iii) *while* loop
 - iv) *do-while* loop
4. Write a PHP program, using *if else* statement, to find the largest number among the three input numbers entered by a user. Write the output. 5
5. Explain the following PHP Assignment Operators with proper example. 4
 - i) += ii) -= iii) *= iv) /=
6. Elaborate the following built-in array functions. Illustrate with example. 5
 - i) *count()*
 - ii) *sort()*
 - iii) *array_reverse()*
7. What are associative arrays. Explain with example program. 6

OR

What are indexed arrays. Explain with example programs.

8. Differentiate between GET and POST method of retrieving values from an input form. 4
9. What is input form validation? Explain, with the code snippet, on how to validate Empty String and Number Input fields? 5
10. Write the PHP code to create "*students*" table inside "*polytechnic*" database with *Id* as auto increment and primary key constraint. 5

<i>students</i>			
<i>Id</i>	<i>Name</i>	<i>DOB</i>	<i>Department</i>

11. Write the PHP code to insert data into "*students*" table inside "*polytechnic*" database. 5
12. Elaborate the following SQL statement. "*INSERT INTO MyGuests (firstname, lastname, email) VALUES (?, ?, ?)*". 5
13. Write and explain the code to connect PHP with MySQL. 5
14. Explain how web server is set up in a local machine using XAMPP/WAMPP software. 5