

END TERM EXAMINATION

THIRD SEMESTER [MCA] DECEMBER 2015

Paper Code: MCA 205

Subject: Java Programming

Time : 3 Hours

Maximum Marks :60

**Note: Attempt any five questions including Q.No. 1 which is compulsory.
Select one question from each unit.**

Q1. Answer **any ten** of the following: (2x10=20)

- a) What is the byte code verifier? Why is it necessary?
- b) Give an example situation when it would be advantageous to create a class with package level accessibility.
- c) What does the statement "Java Strings are immutable" imply? State an advantage of immutability of String in Java?
- d) What is a transient variable? Why do need it?
- e) What is the significance of wait and notify methods on object class?
- f) A Server Socket needs to be bound to a specific port not client socket, why?
- g) What is object serialization? When is it required?
- h) What are the advantages of Prepared Statement over a statement in JDBC?
- i) How would you make two applets on the same web page, communicate with each other?
- j) What are tagging interfaces? What is their use?
- k) What is parameter marshalling? How is it achieved in Java?
- l) Why are swing-components said to be lightweight components?

Unit-I

- Q2. a) Explain the contents of a class file? (4)
b) Explain the need of user defined exceptions with the help of an example. (6)

- Q3. a) Describe the sandbox model of security in Java. (2)
b) An organization employs two types of employees: permanent and temporary. Permanent employees are paid on basis of their designation whereas temporary employees are paid on basis of hours worked. Define classes to show overriding of calculate Pay method so that different logic can be implemented for different types of employees. Write main method to maintain the array of employees and demonstrate the concept of polymorphism. State your assumptions clearly. (8)

Unit-II

- Q4. a) How is thread synchronization implemented in Java? (4)
b) Write and explain a code snippet to transfer an object over a TCP connection. What are the restrictions on the object being transferred? (6)
- Q5. a) How is the File class different from Stream classes? (2)
b) Write a client server application that uses UDP to implement echo server. (8)

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Unit-III

Q6. a) Give examples of situations when you would use the collections: HashMap, HashSet, TreeMap and TreeSet. (4)

b) Create an Applet that uses JDBC to display five latest news items stored in a news table. (6)

Q7. a) Describe any two methods of the class ResultSet Meta Data? (2)

b) Create a **Login Panel** that accepts a User Name and a Password from the user and validates it against a set of values contained in a Map, when user clicks the Login Button. The input fields should be reset when user clicks the Reset button. (8)

Unit-IV

Q8. Create a Java Bean called ImagePreviewerBean. The bean should be able to generate image preview. The name of the image file and the dimensions of the bean should be set by properties filename, width and height respectively. (10)

Q9. Write a RMI application to query the availability of a product in a product store. The reference to the Product Store object is to be made available remotely to the client application. (10)

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