

AMIETE – IT (NEW SCHEME) - Code: AT68

Subject: JAVA & WEB PROGRAMMING

Time: 3 Hours

Max. Marks: 100

DECEMBER 2010

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after half an hour of the commencement of the examination.**
- **Out of the remaining EIGHT Questions, answer any FIVE Questions, selecting THREE questions from Part A and TWO questions from Part B. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2×10)

a. What is byte code in the context of Java?

- (A) The type of code generated by a Java compiler
- (B) The type of code generated by a Java Virtual Machine
- (C) It is another name for a Java source file
- (D) It is the code written within the instance methods of a class.

b. What is the value of z?
double z = 7 / (3 + 0.5);

- (A) 0.5
- (B) 2.0
- (C) 2.833333333
- (D) 3.0

c. What is garbage collection in the context of Java?

- (A) The operating system periodically deletes all of the java files available on the system.
- (B) Any package imported in a program and not used is automatically deleted.
- (C) When all references to an object are gone, the memory used by the object is automatically reclaimed.
- (D) The JVM checks the output of any Java program and deletes anything that doesn't make sense.

d. Which of the following statements correctly describes an interface?

- (A) It's a concrete class
- (B) It's a superclass
- (C) It's a type of abstract class
- (D) none

- e. What should be done to invoke the run() method on a thread for an object derived from the thread class? Select the one correct answer.
- (A) The run() method should be directly invoked on the Object.
 - (B) The start() method should be directly invoked on the Object.
 - (C) The init() method should be directly invoked on the Object.
 - (D) The creation of the object using the new operator would create a new thread and invoke its run() method.
- f. You need to create a class that will store unique object elements. You do not need to sort these elements but they must be unique. What interface might be most suitable to meet this need?
- (A) Set
 - (B) List
 - (C) Map
 - (D) Vector
- g. What does XHTML stand for?
- (A) EXtensible HyperText Markup Language
 - (B) EXtreme HyperText Markup Language
 - (C) EXtensible HyperText Marking Language
 - (D) EXtra Hyperlinks and Text Markup Language
- h. What are the different DTDs in XHTML?
- (A) Strict, Transitional, Loose, Frameset
 - (B) Strict, Transitional, Frameset
 - (C) Strict, Transitional, Loose
 - (D) None
- i. What does CGI stand for?
- (A) Cascading Gate Interfaces
 - (B) Common GIF Interface
 - (C) Common Gateway Interface
 - (D) None
- j. Inside which HTML element do we put the java script?
- (A) <script>
 - (B) <javascript>
 - (C) <js>
 - (D) <scripting>

PART A

Answer any THREE Questions. Each question carries 16 marks.

- Q.2** a. Explain how Java is robust and architecture neutral? (6)
- b. What are the different data types available in Java (5)
- c. Explain the operation of the following operators with examples (5)
- (i) >>>
 - (ii) <<
 - (iii) ^

- Q.3** a. Differentiate between method overloading and method overriding with examples. (8)
- b. Write a Java program to define a base class called Box with width, height, depth as instance variables with a constructor. Use its subclass BoxWeight to include weight as its instance variable and a constructor that gets the value of width, height, depth from the base class and has a method to find the volume. Create an object of the class BoxWeight and obtain the volume and weight. (8)
- Q.4** a. What is an exception? How does Java handle exceptions? Give the keywords and general structure of an exception handling block. (6)
- b. Discuss the following approaches for creating threads with example
 (i) Extending Thread (ii) Implementing Runnable (10)
- Q.5** a. What is a stream? Explain the classification of Java stream classes. (5)
- b. What do you understand by applet? Also explain the steps used in applet development, with the help of an example. (7)
- c. What is the difference between String class and StringBuffer class in Java? (4)
- Q.6** a. What are Java Collections? Explain the LinkedList and HashSet classes of Java. (8)
- b. What are the different Layout managers supported by java? Write a program to demonstrate the flow layout. (8)

PART B

Answer any TWO Questions. Each question carries 16 marks.

- Q.7** a. What is a URL? What is the general form of a URL? Explain the different URL schemes. (6)
- b. What are the major tasks in the over all web development process? (4)
- c. List and describe the different categories of elements in HTML. (6)
- Q.8** a. What are Server-Side Includes? What can be done using them? Give examples. (4)
- b. What are the considerations which should be kept in mind while designing website's information content? (12)
- Q.9** a. What is CSS? How is a style sheet attached to a web page? Give code for the two ways. (7)
- b. Write a CGI program that collects the name and email address of a person from an XHTML form and responds with a "Hello" message. (9)