AMIETE – IT (NEW SCHEME)   -   Code: AT68

Subject: JAVA & WEB PROGRAMMING

Time: 3 Hours

JUNE 2011

Max. Marks: 100

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 45 Minutes 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. The three OOP principles are

   (A) Robust, scalable, optimized
   (B) Inheritance, Encapsulation, polymorphism
   (C) Inheritance, absorption, multi-threading
   (D) Public, private, protected

b. A normal class cannot be declared:

   (A) public   **(B)** private
   (C) final   **(D)** abstract

c. Which modifier will you use to restrict the access of instance variable to the class only and not to any other classes?

   (A) Protected   **(B)** Default
   (C) Final   **(D)** Private

d. What is the output of the following program?

```
class ExceptionDemo
{
public static void main(String[] args)
{
int a[] = new int[] {1,2,3,4,5};
try{
System.out.println(a[6]);
} catch(Exception e) {
System.out.println("Catching Exception ...");
} catch(ArrayIndexOutOfBoundsException ae) {
System.out.println("Catching ArrayIndexOutOfBounds Exception ...");
}
}
}
```

(A) Catching Exception.
(B) Catching ArrayIndexOutOfBounds Exception.
(C) Compile time error.
(D) Runtime error.

e. Which of the following will create a file called test.txt in your current directory?

(A) File f = new File("test.txt");
(B) FileOutputStream fos = new FileOutputStream("test.txt");
(C) FileInputStream fis = new FileInputStream("test.txt");
(D) None

f. If you want to create java GUI application using AWT, you constructed a frame calling Frame f = new Frame();What methods you need to call on the Frame f to make it visible.

(A) f.setVisible(true);
(B) f.setSize(250,250);
(C) Both (A) & (B)
(D) There is no need to call any methods on f explicitly to make it visible.

g. Which web standard is growing these days on net?

(A) web 1   (B) web 2
(C) web 3   (D) web 4

h. When a visitor clicks the submit button on a form, the _____ of each form element is sent.

(A) label   (B) name
(C) value   (D) name-value pair

i. Which elements are mandatory in an XHTML?

(A) doctype, html, head, body, and title
(B) doctype, html and body
(C) doctype, html, head, and body
(D) doctype, html, title, and body

j. What is the correct XHTML for a paragraph?

(A) <P></p>   (B) <P></P>
(C) <p></p>   (D) </p><p>

PART A
Answer any THREE Questions. Each question carries 16 marks.

Q.2   a.   List and Explain java buzz words.   **(8)**

b. What is type casting? Illustrate with example what is meant by Automatic promotion. **(4)**

c. Describe the following key wards with examples **(4)**
   (i) break
   (ii) continue

Q.3 a. Write a class that has three overloaded methods for calculating the area of the following geometric shapes **(5)**

   (i)   Circles – area = πr^2
   (ii) Rectangles – area = width * length

   (iii) Cylinders – area = $2\pi r^2 + 2\pi rh$
   Demonstrate the class in a complete program.

b. What are interfaces? What are their benefits? Give the general form of a class that implements interfaces. **(5)**

c. What is a Package? Discuss with suitable example the steps involved in creating package. **(6)**

Q.4 a. Demonstrate the working of nested try block with suitable program. **(8)**

b. How shared object can be protected from multiple access of threads? **(5)**

c. How do we set priorities for threads? **(3)**

Q.5 a. Explain the role of Java applets in designing a web page. **(4)**

b. Write a java program to find the number of characters, words & lines in a given input file. **(8)**

c. Explain string creation using String & StringBuffer class. **(4)**

Q.6 a. Write a java program that creates a Set using a HashSet implementation. **(5)**

b. Explain the following methods of graphics class **(4)**
   (i)   drawArc
   (ii) drawPolygon

c. Write an example of applet program by using swing component which can handle action event. **(7)**

PART B
Answer any TWO Questions. Each question carries 16 marks.

Q.7 a. What is web? What are the major components of the Web? Explain how the web works   ` **(6)**

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b. What is XHTML? How is XHTML different from HTML? **(**

c. List any 5 XHTML tags. **(5)**

Q.8 a. What are the basic design principles and explain how they apply to website design **(8)**

b. What is organizational Framework? Explain with examples how to create an organizational framework. **(8)**

Q.9 a. Write the CSS rule to achieve the following:

    (i) Set the default fonts for your page to Arial, san-serif
    (ii) Set the font size for all first level header to large, second level header
        medium and third level header to small
    (iii) Set the margin **(3)**

b. What is a form? What elements can you use to submit a form? When a form is submitted, where the data is delivered to? **(5)**

c. Create a JavaScript – enriched XHTML form with the following fields: Your Name, Your Email and check the validity of the email address entered before the form is submitted and prints out the values the user filled in. Make sure that, email field entry conforms to the following rule: Email should include two strings separated by "@". **(8)**