**Code: AT68/AT120**                    **Subject: JAVA & WEB PROGRAMMING**

## AMIETE – IT (Current & New Scheme)

**Time: 3 Hours**            **DECEMBER 2018**            Max. Marks: 100

*PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.*

**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**

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

a. What is the data type preferred for storing primitive logical values?

    **(A)** Int                 **(B)** Boolean

    **(C)** Enum              **(D)** Double

b. Which keyword is used in Java to refer to the current object?

    **(A)** Super             **(B)** This

    **(C)** Parent           **(D)** Current

c. Which one of the following is not a valid thread state?

    **(A)** Running         **(B)** Suspended

    **(C)** Resumed        **(D)** Closed

d. What is the output of the following Java code segment?

```
StringBuffer s1 = new StringBuffer("Buggy");
char c = s1.charAt(3);
s1.delete(3, 3);
s1 = s1.insert(1,c);
System.out.println(s1);
```

    **(A)** Bugugy is printed       **(B)** Bgugy is printed

    **(C)** Bugggy is printed      **(D)** Bguggy is printed

e. What is the output of the following code segment?

```
Vector<Integer> v = new Vector<Integer>(3, 4);
v.addElement(1);
v.addElement(2);
v.addElement(3);
v.addElement(4);
System.out.println(v.size() + v.capacity() + "");
```

    **(A)** 11                 **(B)** 9

    **(C)** Run time error      **(D)** Compilation error

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f. Which of the following is a not a valid encoded URL?
   **(A)** http://www.my_web-site.net1
   **(B)** https://w.s.com?y=2&z=3
   **(C)** https://www.google.com/~user1/web page.html
   **(D)** http://w1.encpgae.cm/t-_1/

g. A website has an extensive listing under different groups and provides an index and a search function. This website follows the
   **(A)** Library model          **(B)** Newspaper model
   **(C)** Organizational model    **(D)** Catalog model

h. The syntax and runtime Javascript errors cannot be viewed
   **(A)** By opening Javascript console in Netscape 6
   **(B)** By typing javascript: in the location box in Netscape 6
   **(C)** In the alert dialog window in Internet explorer
   **(D)** By using alert calls in various key points in code

i. Swing based applets are derived from
   **(A)** Applet class          **(B)** SwingApplet class
   **(C)** SwingJApplet class     **(D)** JApplet class

j. Which of the following will give compile time error?
   **(A)** File f = new File("/","autoexec.bat");
   **(B)** DataInputStream d = new DataInputStream(System.in);
   **(C)** OutputStreamWriter o = new OutputStreamWriter(System.out);
   **(D)** RandomAccessFile r = new RandomAccessFile("OutFile");

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

**Q.2**  a. List and describe the various iteration statements available in Java with necessary examples. **(8)**

   b. Discuss the following OOP principles with the classes "dog", "cat" and "animal"
   - Encapsulation
   - Inheritance **(8)**

**Q.3**  a. What is a constructor? List the different types of constructors that can be added to a Java class. Discuss each type with an example. **(8)**

   b. Illustrate the following with suitable examples **(4x2)**
   - Difference between Java overloading and overriding
   - Dynamic method dispatch in Java

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**Q.4**  a. Discuss in detail how inter-thread communication can be used to avoid thread issues in Java. **(8)**

b. How are custom exceptions created? What are the requirements for a method to throw a custom exception? Give an example for a custom exception and a method that throws the custom exception. **(8)**

**Q.5**  a. Why are byte streams important in Java programming? Illustrate how they differ from buffered streams using an example. **(8)**

b. Discuss in detail how the *StringBuffer* class can be used in different ways to modify the content of a String. **(8)**

**Q.6**  a. How does a Dictionary class differ from a Vector class? List example situations where Dictionary class is more suitable compared to the Vector class. **(8)**

b. Explain component, container, Panel window and frame. **(4x2)**

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

**Q.7**  a. How are the three elements of DNS used for achieving the goals of the DNS? Provide appropriate examples. **(8)**

b. Discuss each of the following XHTML elements with syntax and examples: **(4x2)**
- Text fonts
- Lists and list styles
- Inline image
- Image map

**Q.8**  a. How can tables be defined in XHTML? Also discuss the displaying of tables, formatting of tables and table positioning techniques available in XHTML. **(8)**

b. How do layout grids affect web page design? Describe the process of designing layout grid systems for a website by listing the steps and the requirements for each step. **(8)**

**Q.9**  a. Discuss how a CSS form can be used to obtain text input and user selections including radio buttons and check boxes. In addition, describe processing of such input using a CGI program. **(8)**

b. How can a Javascript program be tested? Assume that a Javascript program for obtaining input from user has been developed. List the testing process steps with explanation. **(8)**