(2½ hours)

[Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.
  (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
  (3) Answers to the **same question** must be **written together**.
  (4) Numbers to the **right** indicate **marks**.
  (5) Draw **neat labeled diagrams** wherever **necessary**.
  (6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt *any two* of the following:**   10
a. Explain the default layout of window. Add suitable example to it.
b. Write a java AWT program that creates the following GUI.(Consider the window Closing event)

Placement Enrollment Form

Enter Student No: [   ]

Enter Name: [   ]

Age: [   ]

Gender: ○ Male ○ Female

Class: [TYB.Sc IT ▼]

Training Required for:
☐ General Aptitude
☐ Numerical Aptitude
☐ Reasoning Skills

[Submit]   [Reset]

c. What is delegation event model? How does java handle the event handling process? Explain.
d. Write a short note on "**Event Listeners**".

2. **Attempt *any two* of the following:**   10
a. Explain the class hierarchy of Java Swing.
b. How to create editable table? Explain.
c. Explain the creation of directory structure in java swing.
d. Explain the JSplitPane as one of the component organizers.

3. **Attempt *any two* of the following:**   10
a. Explain about Javax.servlet package.
b. Explain the significance of Request Dispatcher interface. Explain include() and forward(). Add suitable illustration to it.
c. Write a Servlet that prints the length of the entered string and entered string in upper case. Accept input through html.
d. Explain httpsession. Add suitable example to it.

57855   Page **1** of **2**

4. **Attempt _any two_ of the following:** 10
a. Explain the architecture of JSP.
b. Explain <jsp:include> and <jsp:forward> action tags. Add suitable example to it.
c. Explain the types of JDBC Drivers. Add suitable illustration to it.
d. What is Prepared Statement? What is the significance of setxxx() and getxxx() methods? Explain.

5. **Attempt _any two_ of the following:** 10
a. Explain the core components of JSF.
b. Write a model (bean) and navigational rules (xml file) to find the cube of a given number. (in JSF)
c. What are the advantages of EJB? Explain.
d. Write a session bean that contains the business logic for Simple interest and compound interest. Assume that amount and the number of years for repayment is entered by the user. The business logic should calculate the interest amount for the given months with assumed rate of interest.

6. **Attempt _any two_ of the following:** 10
a. Explain the significance of OGNL.
b. Explain the architecture of hibernate framework.
c. What is ORM? Explain the importance of mapping file.
d. What are inceptors? How do they differ from interceptor stack? Explain.

7. **Attempt _any three_ of the following:** 15
a. Explain the usage of adapter class in handling events.
b. Explain the constructors and methods of JRadioButton class of Java Swing.
c. Explain about cookie class of javax.servlet.
d. Explain the components of JDBC API.
e. Explain the different types of EJB.
f. Explain the MVC pattern of struts framework. Add suitable illustration to it.

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