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**MCS-051**

**MASTER OF COMPUTER  
APPLICATION**

**[MCA (REVISED)]**

**Term-End Examination**

**December, 2023**

**MCS-051 : ADVANCED INTERNET  
TECHNOLOGIES**

*Time : 3 Hours*

*Maximum Marks : 100*

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**Note :** (i) *Question No. 1 is compulsory.*

(ii) *Attempt any **three** questions from the rest.*

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1. (a) Explain the concept of servlet and their role in web programming. Discuss the advantages of using servlets. Also, discuss the life cycle of servlets.

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**P. T. O.**

- (b) What is session tracking in servlets ?  
Explain HTTP session and persistent cookies, in the context of session tracking with suitable example code. 8
- (c) Explain ResultSet in JDBC and its role in retrieving data from a database with the help of suitable example code. 8
- (d) Discuss the role of the tag handler class in custom tag implementation. Provide examples to illustrate the usage of tag handler class. 8
- (e) Differentiate between the following : 4+4
- (i) Non-validating parser and Validating parser
  - (ii) Session beans and Entity beans

2. (a) Describe the relation of Applet and Servlet with JSP. Also, describe how servlet and JSP are integrated. 10
- (b) Explain the following in the context of web security : 10
- (i) Integrity and its types
  - (ii) Confidentiality
  - (iii) Availability
  - (iv) Accountability
3. (a) Explain various types of JDBC drivers. Also, give advantage and disadvantage of each. 10
- (b) Differentiate between stateless session bean and stateful session bean. Also, describe the lifecycle of stateless session bean and stateful session bean with the help of block diagram for each. 10

4. (a) Describe the life cycle of Entity Bean.  
What is the advantage of using EntityBean for database operation over directly using JDBC API to do database operation ? 10
- (b) List and explain the services offered by EJB. Also, discuss the restrictions of EJB.  
10
5. (a) Explain the structure of XML documents with the help of a suitable example. Also, explain the role of DTD and XML parser in the context of XML documents with suitable example. 10
- (b) Write short notes on the following : 5+5
- (i) SecureSocket Layer
- (ii) HTTP Basic Authentication