B.E. COMPUTER SCIENCE & ENGINEERING 3rd YEAR 2nd SEMESTER EXAM- 2022

INTERNET TECHNOLOGIES

Time: 3 hours   Full Marks: 100

Group A (Total Marks: 20) [CO1 and CO2]
Answer any ONE questions.

1.	a)	State the features of adaptive streaming that are similar to the progressive download and the features dissimilar to progressive download.	4+8+6+2=20
	b)	Describe a streaming based protocol.	
	c)	How does streaming of audio differ from video if quality of experience is a prime concern?	
	d)	For pull based streaming applications, which features need to be measured/monitored by the client?	
2.	a)	How are the movie fragments randomly accessed following Microsoft smooth streaming protocol?	6+6+6+2=20
	b)	Why is UDP not sufficient for video streaming applications? Does TCP address those issues?	
	c)	How does RTP handle audio and video data?	
	d)	Is RTSP push based or pull based? Give reasons.	

Group B (Total Marks: 30) [CO3]
Answer ALL questions.

4.	a)	Discuss about the significance of MIME types for HTTP based applications. Give corresponding code snippets of at least one type.	6+4+5=15
	b)	How is caching decided by the different versions of the HTTP protocol? What do you store in cache here?	
	c)	Compare between HTTP2.0 and websockets.	
5.	a)	Given that a web application is developed using the Spring framework, what will cause HTTP response codes 3XX, 4XX and 5XX.	6+2+4+3=15
	b)	State the relation among web application, www and the Internet.	
	c)	State the motivation for using design patterns for developing web applications.	
	d)	Though HTTP is a stateless protocol, user behavior can be tracked. –Justify the comment.	

Group C (Total Marks: 30) [CO4]
Answer any ONE question.

6.	An online medicine store sells different types of medicines. When a customer enters a generic name, the application asks for other details such as company names and price ranges. It then displays the medicines matching the user's requirements or says "No items are available". a) Write a servlet to handle the request from the client along with required annotations. Highlight how states are handled. b) Create a filter to intercept both get and post requests from a particular webpage for data validation. c) How are implicit objects handled in JSP? d) When is it necessary to share an object as a context attribute? Explain with code snippets. e) How would you call one servlet/jsp from another servlet? Does it involve the client-side? – Justify.	12+4+4+5+5=30
7.	A restaurant deploys a web application for taking online orders. The team plans to provide a list of customized platters for 'home delivery' apart from the 'dine-in' option. Answer the following if the application is developed using the Spring framework. a) How can dependency injection be implemented in this application? b) Write the role of object relational mapping in extracting a platter information from the database. Let us assume that a suitable database table exists. c) How does Spring Boot identify the dependency during application startup? d) Discuss about two design patterns apart from dependency injection utilized by Spring. Show how is it realized w.r.t the current application. e) Discuss automatic data marshalling w.r.t Spring framework. Give suitable code snippets.	6+6+5+8+5=30

Group D (Total Marks: 20) [CO5]
Answer any ONE question.

8.	a) What is confidentiality? b) How could it be provided through the web applications? c) What is declarative security? Is there any other way of securing web applications? d) How can injection attack happen through HTTP request-response? e) How are user session management and authentication related to each other? Discuss w.r.t Spring framework.	2+6+2+5+5=20

9.			3+7+4+6=20
	a)	Explain the role of '*http.csrf().disable();*' w.r.t Spring security.	
	b)	What is the difference between authentication and authorization? Are they handled separately in Spring? Explain with suitable code snippets.	
	c)	Why is it not advisable to keep database connections in JSPs when JSPs are functionally equivalent to servlets?	
	d)	How does the concept of aspect-oriented programming help in building security services?	