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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER MCA DEGREE EXAMINATION, JULY 2018
Course Code: RLMCA 201

Course Name: COMPUTER NETWORKS

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks   Marks

1	What is meant by a protocol? Enlist the three elements of protocol.	(3)
2	What is the purpose of conditional GET message in HTTP?	(3)
3	What is meant by handshaking? Which protocol implements handshaking mechanism?	(3)
4	What is subnet masking? Enlist the default mask used in classful addressing.	(3)
5	What is the difference between a hub and a switch?	(3)
6	List out all the services offered by the link layer.	(3)
7	How mobility is ensured in the same IP subnet?	(3)
8	How can collisions be avoided in the presence of hidden terminals?	(3)

PART B
Answer six questions, one full question from each module and carries 6 marks

Module I

9   a)   What are the different layers of Internet model?   (4)

     b)   Which are the new layers implemented by the OSI reference model? Quote its functionality.   (2)

OR

10   a)   What are the components of basic communication system?   (3)

      b)   What is meant by QoS? How it is implemented?   (3)

Module II

11   a)   What is the difference between persistent HTTP with pipelining and persistent HTTP without pipelining? Which among these is default connection in HTTP 1.1   (3)

      b)   Mention the difference between recursive and iterative queries in DNS.   (3)

OR

12   a)   Why does email application use Mail Access Protocol even when SMTP is already implemented for mail sending?   (2)

      b)   What is the purpose of using MIME in e-mail application?   (4)

Module III

13   Demonstrate the following flow control mechanisms with suitable example-Go-Back-N and Selective Repeat.   (6)

OR

14   a)   Describe the UDP segment Structure with diagram.   (3)

      b)   How is congestion control handled by TCP?   (3)

Module IV

15 a) List the difference between classful and classless addressing.   (4)
    b) Why is IP said to provide best effort delivery service/?   (2)

<div align="center">**OR**</div>

16 a) Compare and contrast the header fields of IPv4 and IPv6.   (3)
    b) Explain the operation of RIP in the internet.   (3)

<div align="center">**Module V**</div>

17   What are the different error detection techniques used at the data link layer?   (6)

<div align="center">**OR**</div>

18 a) What are channel partitioning protocols? Indicate the difference between each   (3)
        category of channel partitioning protocol.
    b) Draw the Ethernet frame structure and mention the purpose of fields in it.   (3)

<div align="center">**Module VI**</div>

19 a) What are the principal components of network management architecture?   (3)
    b) How is GPRS different from CSMA?   (3)

<div align="center">**OR**</div>

20 a) Why are ACKs used in 802.11 but not in wired Ethernet?   (2)
    b) Briefly describe the WPAN (802.15) technology used in wireless network.   (4)

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER MCA DEGREE EXAMINATION, JULY 2018

Course Code: RLMCA203

Course Name: SOFTWARE ENGINEERING

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks   Marks

1	What is software maintenance? Mention different types of software maintenance.	(3)
2	What is meant by Software development life cycle? Mention different phases of SDLC.	(3)
3	Distinguish between Sashimi and incremental waterfall model.	(3)
4	Define Liskov substitution principle (LSP).	(3)
5	What is acceptance testing?	(3)
6	List out various roles in SCRUM.	(3)
7	What is meant by assertive programming?	(3)
8	Explain continuous integration (CI).	(3)

PART B
Answer six questions, one full question from each module and carries 6 marks
Module I

9 a) What is MOSCOW method?   (2)
   b) Compute the function point value for a project value for a project with the   (4)
      following information domain characteristics.
              Number of external inputs : 30
              Number of external outputs: 62
              Number of external inquires: 20
              Number of external interface files: 2
              Number of internal logical files: 8
      Assume that all complexity adjustment values are average.

OR

10 a) What is cutover? Mention different types of cutover.   (2)
    b) What is COCOMO model and where it is used?   (4)

Module II

11 a) Differentiate between iterative and predictive models highlighting their   (2)
       advantages and disadvantages.
    b) What is meant by risk management? Discuss the essential activities involved in   (4)
       risk management.

OR

12 a) Mention different phases of rapid application development (RAD).   (2)
    b) With a neat diagram explain spiral model. What are the advantages and   (4)
       disadvantages of using spiral model?

Module III

13 a) Differentiate between traditional testing and agile testing.   (2)
    b) Explain   feature   driven   development   (FDD)   and   Lean   software   (4)
        development(LSD).

OR

14 a) Explain test driven development (TDD).   (2)
    b) Explain extreme programming and its practices.   (4)

Module IV

15 a) Write a note on user story.   (2)
    b) What is meant by agile estimation? Explain any one estimation technique for   (4)
        agile project.

OR

16 a) Write note on burn down chart.   (2)
    b) With a neat diagram explain SCRUM.   (4)

Module V

17 a) Differentiate between verification and validation.   (2)
    b) What is meant by pragmatic? What are the characteristics of a pragmatic   (4)
        programmer?

OR

18 a) Distinguish between load testing and spike testing.   (2)
    b) List out six principles for writing maintainable code.   (4)

Module VI

19 a) State the benefits of release monitoring.   (2)
    b) What is meant by software configuration management? Mention its importance.   (4)

OR

20 a) Distinguish between version control and change control.   (2)
    b) Write notes on release management and its benefits.   (4)

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER MCA DEGREE EXAMINATION, JULY 2018
Course Code:RLMCA205
Course Name: DATABASE MANAGEMENT SYSTEMS

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks   Marks

1	State the levels of abstraction in a DBMS.	(3)
2	What is DBA? List out the tasks of DBA?	(3)
3	Explain selection and projection operations with examples.	(3)
4	Define triggers. What are different types of triggers?	(3)
5	Define functional dependency with an example.	(3)
6	Explain serializable schedule with an example.	(3)
7	Define data mining versus data warehousing.	(3)
8	What are ACID properties of transactions?	(3)

PART B
Answer six questions, one full question from each module and carries 6 marks
Module I
9   Define data models and explain different types of data models?   (6)
OR
10   Draw an ER diagram for an airport database. Specify the key and participation   (6)
      constraints for each entity and relationship set.
Module II
11   Explain fundamental relational algebra operations with Examples.   (6)
OR
12   Explain Natural join operations and outer join operations.   (6)
Module III
13   Explain set operations and Aggregate functions in SQL.   (6)
OR
14   Consider the following Company Schema   (6)

        Employee (Eid,Ename,address,Deptno,Pno)
        Department (Deptno,Dname,Mngrid)
        Project (pno,pname,plocation)
        Works-on (Eid,Pno,,Hours)
        Dependent (Eid,Deptno,Dname,Relationship)

i) Retrieve the name and address of the employee who works for
the administrator department.
ii) Retrieve the names of employees who have no dependents.
iii) Find the name of employees who work on all the projects
controlled by department 4.

Module IV

15   Define Normalization? Explain 3 NF with an example.   (6)

OR

16   Explain the axioms of functional Dependencies.   (6)

Module V

17   What is the two - phase locking protocol? How does it guarantee serializability?   (6)

OR

18   Define transaction. Draw a state transition diagram and explain states of the   (6)
      transactions.

Module VI

19   Explain association rules in data mining.   (6)

OR

20   Explain data-warehouse architecture.   (6)

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST/THIRD SEMESTER MCA DEGREE EXAMINATION, JULY 2018
Course Code: RLMCA207
Course Name: DESIGN AND ANALYSIS OF ALGORITHMS

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks   Marks

1	What is meant by the time complexity of an algorithm? Explain with an example.	(3)
2	Explain Strassen's method for matrix multiplication.	(3)
3	Explain the control abstraction for greedy strategy.	(3)
4	Compare and contrast between divide and conquer and dynamic programming	(3)
5	Differentiate between depth first and breadth first tree in branch and bound method.	(3)
6	What are bounding functions?	(3)
7	What is control abstraction for backtracking?	(3)
8	Compare P and NP classes of algorithms.	(3)

PART B
Answer six questions, one full question from each module and carries 6 marks

Module I
9	With suitable examples, explain various methods of solving recurrence equations.	(6)

OR

|		
10	Explain Asymptotic notations and their properties with a suitable example.	(6)

Module II
11	Write the algorithm for merge sort and sort the following elements 50,30,80,5,90 using merge sort.	(6)

OR

12	Write the algorithm for Quick Sort and sort the elements 50,30,80,5,90 using quick sort.	(6)

Module III
13	Obtain the minimum cost spanning tree of the below graph using Kruskal's algorithm.	(6)
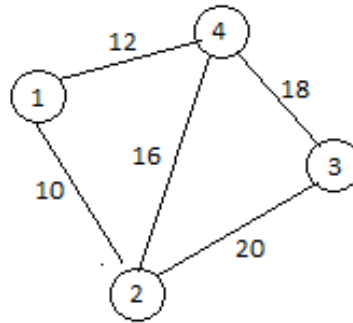
OR

14   Explain the job sequencing problem with a suitable example.   (6)

Module IV

15   Explain all pair shortest path algorithm with an example   (6)

OR

16   Explain travelling sales person problem with an example.   (6)

Module V

17   Explain sum of subsets problem with an example.   (6)

OR

18   Explain N^2-1problem with an example.   (6)

Module VI

19   Compare SAT and 3-SAT problem.   (6)

OR

20   Explain vertex cover problem with relevant examples.   (6)

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST/THIRD SEMESTER MCA DEGREE EXAMINATION, JULY 2018
Course Code:RLMCA209
Course Name: WEB PROGRAMMING

Max. Marks: 60 Duration: 3 Hours

PART A
Answer all questions, each carries3 marks
Marks

1	What is hypertext?	(3)
2	Outline any three commands supported by FTP.	(3)
3	Generate ahotspot to show the general information of a place.	(3)
4	Differentiate between relative and fixed positioning of elements.	(3)
5	Explain any three methods of window object.	(3)
6	Define JSON.	(3)
7	Which statement is used to display a message in PHP?	(3)
8	How can a variable be saved in a session in PHP?	(3)

PART B
Answer six questions, one full question from each module and carries 6 marks
Module I

9   What is SMTP? How does it useful to send e-mails? (6)

OR

10   Describe the differences between the GET and POST methods of the HTTP (6)
protocol.

Module II

11   Design a web form to enter the feedback of an event. (6)

OR

12   Which of the tags are used to represent information in Tabular format? Explain. (6)

Module III

13 a) Generate a CSS file with following properties and implement it: (4)
- Background color of the page should be gray
- Font style is Verdana and font size is 1.2em.
- Page width and height is 500 pixels
- Heading color is blue

  b) What are the benefits of using styles compared with placing formatting directly (2)
  into the text of the webpage?

OR

14 Discuss the different ways to implement CSS? Explain with an example. (6)

Module IV

15 Design a form to input name, phone number, email and password.Write a (6)
JavaScript program to do the input validations.

OR

16 a) Describe the Document Object Model. (2)
  b) Write a JavaScript program that selects an item from a drop-down list and (4)
  displays an alert message to display the selected item.

Module V

17 List out any three browser objects to manage the application environment. (6)

OR

18 Summarise the working of AJAX with an example. (6)

Module VI

19 a) Describe how input from an HTML form is retrieved in a PHP program? (3)
  b) Discuss the difference between include and require statements. (3)

OR

20 Develop a simple web database application to hold the Music Details. Music (6)
table should contain fields to store Song ID, Film name, Lyrics (include only first
line of song), Singer name, and Category of music. Write statements to retrieve
information and display it in a web page.

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