1100CST303122106
FINAL SCHEME

Total Pages: 3

Scheme of Valuation/Answer Key

(Scheme of evaluation (marks in brackets) and answers of problems/key)

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2021

Course Code: CST 303

Course Name: COMPUTER NETWORKS

Max. Marks: 100 Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	Layering principle - 2 marks Diagram - 1 mark	3
2	Propagation delay= Distance/propagation speed – 1 mark Answer =12000x1000/2.4x10^8 =50 ms – 2 marks	3
3	Data field size and padding bits explanation - 3 marks	3
4	Bridges - 1.5 marks Switches - 1.5 marks	3
5	Optimality Principle - 1.5 marks Diagram and explanation - 1.5 marks	3
6	Source based routing - 1.5 marks Core based routing - 1.5 marks	3
7	IP checksum and its explanation - 2 marks Reason - 1 mark	3
8	Open loop- 1 marks Closed loop -1 marks Example- 0.5 marks each	3
9	End to end layer because it performs Process to process delivery- 1 mark Reason- Data link layer provides node to node flow and error control only.If application requires end to end flow control ,it must be provided by Transport layer – 2 marks	3
10	Port 20 -data connection and Port 21 - control connection	3

Port identification = 2 marks

Diagram - 1 mark

PART B

(Answer one complete question from each module)

Module -1

11	a)	Justification - 2 marks Diagram- 2 marks Explanation - 1 marks each for each layer (4)	8
	b)	LAN - 2 marks MAN - 2 marks WAN - 2 marks	6
12	a)	Any 4 topologies- Star,Mesh,Bus,Ring- Figure+explanation –1 mark each(4 marks) Advantage and disadvantage of each- 1 mark each(4 marks)	8
	b)	Structure of Fiber optical cable = 2 marks, explanation 2 marks, Justification 2 marks	6

Module -2

13	a)	Fast Ethernet explanation with types - 3 marks Giga bit Ethernet explanation with types - 3 marks	6
	b)	Go back N protocol explanation with necessary diagram - 4 marks Selective Repeat protocol explanation with necessary diagram - 4 marks	8
14	a)	HDLC frame format diagram - 2 marks Explanation - 3 marks I frame - 1 mark S frame - 1 mark U frame - 1 mark	8
	b)	CSMA / CD with explanation and diagram - 3 marks CSMA / CA with explanation and diagram - 3 marks	6

Module -3

15	a)	Link State Routing any 4 points with explanation- 4 Marks Distance Vector Routing any 4 points with explanation - 4 marks	8
	b)	Datagram subnet - 3 marks Virtual circuit subnet – 3 marks	6

16 a) Count to infinity problem- 3 marks
Solution to Count to infinity problem not mentioned in syllabus. Hence **3 marks** may be awarded if the question is attempted.

6

b) Scheduling techniques to improve the Quality of Services(QoS) - 2 marks

1. FIFO queuing,
2. Priority queuing,
3. Weighted fair queuing....

Describing each - 2 marks 8

Module -4

17 a) Sub netting concept illustration- 4 marks
Problem solving
The number of 1s in the default mask is 16 (class B). 1000 subnets is not a power of 2. The next number that is a power of 2 is 1024 (2_{10}). We need 10 more 1s in the subnet mask.
The total number of 1s in the subnet mask is 26 (16 + 10). The total number of 0s is 6 (32 - 26).
Subnet mask = 255.255.255.192. = (2 marks)
The number of subnets is 1024. (1 mark)
The number of addresses in each subnet is (6 is the number of 0s) 64. (1 mark)

8

b) Any 6 characteristics - 1 mark each 6

18 a) OSPF working with description to different Area,Routers - 3 marks,
5 message types names(Hello,Link update etc), explanation - 4 marks

7

b) ARP and RARP- Address translation - 2 marks
Explanation of working of both- 2.5 marks each

7

Module -5

19 a) TCP congestion control approaches :additive increase and multiplicative decrease, slow start - with explanation 3 marks each
Diagram 1 mark each

8

b) UDP segment structure - 3 marks
Explanation 3 marks

6

20 a) Diagram- 2 marks

Components : User agent, Message transfer agent - 2 marks
Functions : Composition, transfer, reporting, displaying, disposition - 5 marks 9

b) DNS attacks not mentioned in syllabus. Hence **5 marks** can be awarded if the question is attempted.

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