b.	Explain in detail about the wireless transmission with some examples.	12	4	4	4
32. a.	Discuss in detail about the simplified IoT architecture.	12	4	5	3
	(OR)				
b.	Explain in detail the need for optimization and optimizing IP for IoT from 6LOWPAN to 6Lo.	12	3	5	4

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2023

Fourth Semester

18AIS203J – COMPUTER NETWORKS AND COMMUNICATIONS

(For the candidates admitted during the academic year 2018-2019 to 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. The main function of transport layer is _____. (A) Process-to-process delivery of messages (B) Node-to-node delivery of messages (C) Updating routing tables (D) Maintenance of routing tables	1	1	1	3
2. The point-to-point circular link which connects end devices together is called as _____. (A) Mesh topology (B) LAN topology (C) Tree topology (D) Ring topology	1	1	1	3
3. The main characteristics of computer network is _____. (A) Resource sharing (B) Disk sharing (C) File sharing (D) Document sharing	1	1	1	4
4. The service to the end user is provided by _____ layer. (A) Transport layer (B) Session layer (C) Application layer (D) Presentation layer	1	1	1	3
5. How often does a RIP V1 router broadcast its routing table by default? (A) Every 30 seconds (B) Every 60 seconds (C) Every 90 seconds (D) RIP V1 does not broadcast periodically	1	2	2	1
6. The OSPF protocol is an intradomain routing protocol based on _____ routing. (A) Distance vector (B) Link state (C) Path vector (D) Link vector	1	1	2	3
7. Which BGP message is sent when an error condition is detected? (A) BGP update message (B) BGP keep alive message (C) BGP open message (D) BGP notification message	1	1	2	1
8. In which routing method do all the routers have a common database (A) Distance vector (B) Link vector (C) Shortest path (D) Link state	1	1	2	1

9. _____ control refers to methods of error detection and corrections. 1 2 3 3
(A) Flow (B) Error
(C) Transmission (D) Data control

10. _____ is the regulation of the amount of data that can be sent. 1 2 3 3
(A) Line discipline (B) Flow control
(C) Error control (D) Data flow

11. The sender's window in a sliding window protocol expands when _____. 1 2 3 1
(A) An ACK if received (B) An ACK is sent
(C) A frame is sent (D) A frame is received

12. The stop-and-wait flow control method is the same as the sliding window method with a window size of 1 2 3 4
(A) 0 (B) 1
(C) 2 (D) 4

13. Bluetooth supports _____. 1 2 4 4
(A) Point-to-point connections (B) Point-to-multipoint connections
(C) Both point-to-point connections and point-to-multipoint connection (D) Multipoint to point connection

14. The architecture of Bluetooth is called _____. 1 1 4 3
(A) Scatternet (B) Piconet
(C) Master and salve (D) Master node

15. Transmission media are usually categorized as _____. 1 2 4 3
(A) Determinate or indeterminate (B) Guided or unguided
(C) Fixed or unfixed (D) Encryption or decryption

16. Which of the following cable doesn't come into guided media? 1 2 4 3
(A) Coaxial cable (B) Twisted-pair cable
(C) Fiber optic cable (D) Microwave

17. Which of the following is used to capture data from the physical world in IoT devices? 1 2 5 4
(A) Sensors (B) Actuators
(C) Microprocessors (D) Microcontroller

18. IoT gateway must provide _____. 1 1 5 3
(A) Protocol abstraction (B) Data storage
(C) Security with hardware (D) Simple and fast installation

19. Which of the following protocol is used to link all the devices in the IoT? 1 2 5 1
(A) HTTP (B) UDP
(C) Network (D) TCP / IP

20. How many number of elements are there in the open IoT architecture? 1 1 5 3
(A) 3 elements (B) 7 elements
(C) 8 elements (D) 6 elements

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Distinguish between serial and parallel transmission.	4	3	1	3
22.	You have been given with 4 pcs, 2 laptops, a switch and a router, construct two local area networks [LAN A and LAN B] as per the following topologies and draw the configurations of the scenarios.		3	1	2
	(i) LAN A should have 2 pcs and 1 laptop connected, with a switch. Connect the end devices with a switch using start topology	1			
	(ii) Lab B has 2 pcs and a laptop connected with a router. Connect the end devices with a ring topology	1			
	(iii) Discuss the pros and cons of the above two topologies	2			
23.	List out the metrics used in determining the best path for a routing protocol.	4	3	2	3
24.	Illustrate the functions of RIP message? Why do OSPF message propagate faster than RIP messages?	4	3	3	3
25.	Describe the channelization in detail.	4	3	4	4
26.	List out the applications of internet of thing.	4	3	5	5
27.	Compare the cyber-physical system and internet of things.	4	4	4	5

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Explain the ISO-OSI model of computer network with neat diagram.	12	4	1	3
	(OR)				
b.	Explain the TCP/IP reference model with neat diagram.	12	4	1	3
29. a.	Explain in detail about the enhanced interior gateway routing protocol with example.	12	4	2	4
	(OR)				
b.	Illustrate the working of distance vector protocol with examples.	12	4	2	4
30. a.	Illustrate the design mechanism for selective repeat automatic repeat request and explain in detail with example.	12	4	3	4
	(OR)				
b.	Given the code word polynomial $x^{11}+x^2+x^6+x^5+x^4+1$ and the divisor polynomial x^4+x^2+x+1, show the generation of the data word polynomial at the sender side using the binary division and assume no error.	12	4	3	2
31. a.	Summarize the necessity for multiplexing. Discuss in detail about the multiplexing types.	12	3	4	3
	(OR)				