

St. Philomena's College (Autonomous), Mysore
PG Department of Computer Science
Question Bank (Revised Curriculum 2020 onwards)
First year- First Semester (2020 -21 Batch)

Title of the course: Data Communication

QP Code: 86132

Unit	SI. No	Questions	Marks
1	1	Define communication.	2
1	2	What is data communication?	2
1	3	List the components of communication.	2
1	4	What are the methods of data representation?	2
1	5	List the types of data flow.	2
1	6	Define network.	2
1	7	List different types of networks.	2
1	8	Abbreviate LAN,WAN,MAN,PAN	2
1	9	Define topology.	2
1	10	List different types of topology	2
1	11	Define hub.	2
1	12	Define switch.	2
1	13	What is a router?	2
1	14	Define a bridge.	2
1	15	What are the different categories of network?	2
1	16	Define internet	2
1	17	What is a protocol?	2
1	18	List the protocol of data link layer	2
1	19	List the protocol of network layer	2
1	20	List the protocol of transport layer	2
1	21	List the protocol of application layer	2
2	22	What is a signal?	2
2	23	Define sine wave.	2
2	24	What are digital signals?	2
2	25	What are analog signals?	2
2	26	Define frequency.	2
2	27	What is a bandwidth? Write the formula to find bandwidth.	2
2	28	Define wavelength	2
2	29	What are composite signals?	2
2	30	What is transmission impairment?	2
2	31	What is noise?	2

2	32	What is distortion?	2
2	33	What is attenuation?	2
2	34	What is multiplexing? list the types	2
2	35	List the protocols of noisy and noiseless channels	2
2	36	List the types of wireless medium.	2
2	37	List the types of transmission medium.	2
2	38	List the types of errors	2
2	39	What is redundancy?	2
2	40	What is flow control?	2
2	41	Define error control.	2
3	42	Define HDLC.	2
3	43	What is NRM?	2
3	44	What is ABM?	2
3	45	Enlist the HDLC frame list.	2
3	46	Mention different types of HDLC frames.	2
3	47	Mention different categories of multiple access protocols.	2
3	48	Mention different random access protocols.	2
3	49	Mention different controlled access protocols.	2
3	50	Mention different channelization methods.	2
3	51	What are connecting devices? Give an example.	2
3	52	What are the five categories of connecting devices?	2
3	53	Define passive hubs.	2
3	54	Define repeaters.	2
3	55	Define bridge.	2
3	56	Define router.	2
3	57	Define gateways.	2
3	58	Define virtual circuit.	2
3	59	Define frame relay method.	2
3	60	Define ATM networks.	2
3	61	Define network addressing. Give an example.	2
3	62	What are the different sub classes of IP address? Mention their address ranges.	2
3	63	Define network ID and host ID.	2
3	64	Define routing.	2
3	65	Define connection oriented services.	2
3	66	Define connectionless services.	2
3	67	On the basis of what information router selects a routing method?	2
3	68	Enlist different routing methods.	2

3	69	What are the different ways of implementing connection oriented services?	2
4	70	Define Routing at network layer.	2
4	71	Define static and dynamic routing.	2
4	72	Mention disadvantages of fixed path routing.	2
4	73	Define data traffic.	2
4	74	What are the three traffic profiles in networking?	2
4	75	Define congestion.	2
4	76	What causes congestion?	2
4	77	Define congestion control.	2
4	78	What is the functionality of transport layer?	2
4	79	What is socket()?	2
4	80	What is bind()?	2
4	81	What is listen()?	2
4	82	What is accept()?	2
4	83	Define conncet()?	2
4	84	Define service point addressing at transport layer.	2
4	85	Define segmentation at transport layer protocol.	2
4	86	Define segmentation and reassembly.	2
4	87	Define multiplexing and de-multiplexing.	2
4	88	Enlist elements of transport protocol.	2
1	89	Explain the fundamental characteristics of data communication.	5
1	90	Explain 5 components of data communication	5
1	91	What are the different forms of representing the data?	5
1	92	How does data flow happen? Explain in detail	5
1	93	Explain categories of networks	5
1	94	Write a short note on internet.	5
1	95	Explain network models	5
1	96	Write a short note on physical layer.	5
1	97	Write a short note on data link layer	5
2	98	Explain analog to analog transmission	5
2	99	Write about periodic analog signals	5
2	100	Suppose a signal travels through a transmission medium and its power is reduced to one-half. This means that $P_2 = P_1$ In this case, the attenuation (loss of power) can be calculated as	5
2	101	A signal travels through an amplifier, and its power is increased 10 times. This means that $P_z = 10P_1$ In this case, the amplification (gain of power) can be calculated as	5

2	102	The loss in a cable is usually defined in decibels per kilometer (dB/km). If the signal at the beginning of a cable with -0.3 dB/km has a power of 2 mW, what is the power of the signal at 5 km?	5
2	103	Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels. The maximum bit rate can be calculated as	5
2	104	Consider an extremely noisy channel in which the value of the signal-to-noise ratio is almost zero. In other words, the noise is so strong that the signal is faint. For this channel the capacity C is calculated as	5
2	105	Write a short note on FDM	5
2	106	Write short note on error correction	5
2	107	Write a short note on error detection	5
3	108	Write a note on HDLC.	5
3	109	Write a note on multiple access protocols.	5
3	110	Write a note on random access protocols.	5
3	111	Write a note on controlled access protocols and channelization methods.	5
3	112	Differentiate between different channelization methods.	5
3	113	Differentiate between different channelization methods.	5
3	114	Differentiate between different ALOHA methods.	5
3	115	Differentiate between different CSMA methods.	5
3	116	Write a note on virtual circuit.	5
3	117	Write a note on frame relay devices.	5
3	118	Explain connecting devices which works at both physical and data link layer.	5
3	119	Write a note on frame relay devices.	5
3	120	Write a note on ATM networks.	5
3	121	Write a note on classful addressing.	5
3	122	What are the advantages of ATM networks? Explain.	5
3	123	Write a note on networks addressing.	5
3	124	Explain advantages of ATM networks.	5
3	125	Write a note on routing.	5
3	126	Explain how connection oriented services are implemented.	5
3	127	Write a note on network layer design issues.	5
4	128	Write a note on routing at network layer.	5
4	129	Write a note on data traffic.	5
4	130	Write a note on congestion.	5
4	131	Write a note on congestion control.	5
4	132	Briefly discuss data traffic in networking.	5
4	133	Briefly discuss congestion in networking.	5
4	134	Write a note on services provided by transport layer.	5

4	135	Briefly explain segmentation and reassembly at transport layer.	5
4	136	Briefly explain multiplexing and de-multiplexing at transport layer.	5
4	137	Briefly explain error control at transport layer.	5
4	138	Write a note on connection based transport layer.	5
4	139	Write a note on flow control at transport layer.	5
4	140	Write a note on crash recovery at transport layer.	5
1	141	Explain importance of topologies with its types.	7
1	142	Draw different types of topologies and explain in detail	7
2	143	Explain digital to analog transmission	7
2	144	Explain analog to digital transmission	7
2	145	Give difference between flow control and error control	7
2	146	Give difference between error correction and error detection	7
3	147	Discuss different fields of HDLC frames in detail.	7
3	148	Discuss CSMA method in multiple access.	7
3	149	Explain CSMA persistence methods in detail.	7
3	150	Explain how FDMA works.	7
3	151	Explain TDMA channelization method.	7
3	152	Explain how CDMA channelization method works.	7
3	153	Explain 3 layers of the ATM reference model.	7
3	154	Differentiate different classful network addressing.	7
3	155	Explain store and forward switching in detail.	7
3	156	Discuss services to transport layer.	7
3	157	Discuss multicast routing in detail.	7
3	158	How connectionless services are provided? Explain.	7
4	159	Briefly explain transport service primitives.	7
1	160	Explain network layer.	8
1	161	What is OSI model? Explain transport layer	8
1	162	With the protocols explain application layer.	8
2	163	Explain digital to digital transmission	8
2	164	Explain transmission impairment in detail	8
2	165	Explain line coding and block coding in detail	8
2	166	Write about data link error detection and correction protocol	8
3	167	Explain different HDLC frames in detail.	8
3	168	Explain how slotted ALOHA works in detail.	8
3	169	Discuss pure ALOHA method in detail.	8

3	170	Explain how reservation controlled access method works.	8
3	171	Explain how polling control access method works.	8
3	172	Explain token passing controlled access method in detail.	8
3	173	Explain class C, D and E in detail.	8
3	174	Explain ATM network architecture.	8
3	175	Explain unicast routing in detail.	8
3	176	Explain broadcast routing in detail.	8
3	177	How connection oriented is provided? Explain.	8
3	178	Discuss anycast routing in detail.	8
4	179	Explain different Berkeley sockets methods in detail.	8
1	180	Explain TCP/IP model	10
1	181	What are the responsibilities of the data link layer in the OSI model?	10
1	182	What are the responsibilities of the network layer in the OSI model?	10
1	183	What are the responsibilities of the transport layer in the OSI model?	10
2	184	Write about FDM, TDM, WDM	10
2	185	Explain amplitude modulation and frequency modulation	10
3	186	Explain different transfer modes supported by HDLC.	10
3	187	Explain controlled access methods in detail.	10
3	188	Explain any two connecting devices.	10
3	189	Explain connecting devices which works under physical layer and at the physical layer.	10
3	190	Explain frame relay technology in detail.	10
3	191	Explain three layer connecting devices and also the device which works at all the layers of the OSI model.	10
3	192	Explain ATM and ATM networks in detail.	10
3	193	Explain class A and class B network addressing.	10
4	194	Explain fixed path routing method in detail.	10
4	195	Explain open loop solution for congestion control.	10
4	196	Explain closed loop solution for congestion control.	10
4	197	Discuss transport service primitives in detail.	10
1	198	Write about data communication OSI model.	15
1	199	Explain 7 layers of OSI model	15
2	200	Explain multiplexing with its types	15
2	201	Explain telephone modem.	15
2	202	Explain analog to analog conversion in detail	15
2	203	Write about transmission media in detail	15

3	204	Explain random access protocols in detail.	15
3	205	Discuss ALOHA methodology in detail.	15
3	206	Discuss CSMA collision avoidance method.	15
3	207	Discuss CSMA collision detection method.	15
3	208	Explain how controlled access methods work.	15
3	209	Discuss different channelization methods.	15
3	210	Explain different connecting devices in detail.	15
3	211	Discuss frame relay technology in detail.	15
3	212	Explain classful addressing in detail.	15
3	213	Explain architecture of ATM networks.	15
3	214	Discuss network layer design issues in detail.	15
3	215	Explain different routing methodologies in detail.	15
4	216	Explain shortest path routing method with a suitable example.	15
4	217	Discuss flooding routing protocol in detail.	15
4	218	Discuss different routing protocols in detail.	15
4	219	How congestion control is done? Explain.	15
4	220	How congestion can be prevented? Explain.	15
4	221	How congestion can be resolved? Explain.	15
4	222	Explain two categories of congestion control in detail.	15
4	223	Explain transport service primitives in detail.	15
4	224	Explain the concept of Berkeley sockets in detail.	15
4	225	Explain elements of transport protocol in detail.	15

Question Paper Pattern- Blue Print

Department: PG Computer Science		
Subject Name: Programming Language Pragmatis		
Duration: 03 Hrs		Total marks=70
PART A		
1	Answer any FIVE of the following	5x2=10
a	Unit 1	
b	Unit 1	
c	Unit 2	
d	Unit 3	
e	Unit 4	
f	Unit 4	
g	Unit 4	
PART B		
Answer any ONE FULL question from the following		4x15=60

2	a	Unit 1	15
	b	Unit 1	
OR			
3	a	Unit 1	15
	b	Unit 1	
OR			
4	a	Unit 2	15
	b	Unit 2	
OR			
5	a	Unit 2	15
	b	Unit 2	
OR			
6	a	Unit 3	15
	b	Unit 3	
OR			
7	a	Unit 3	15
	b	Unit 3	
OR			
8	a	Unit 4	15
	b	Unit 4	
OR			
9	a	Unit 4	15
	b	Unit 4	

Question Paper Pattern- model paper

Department: PG Computer Science		
Subject Name: Data Communication		
Duration: 03 Hrs	Total marks=70	
PART A		
1	Answer any FIVE of the following	5x2=10
a	Define topology.	
b	What are analog signals?	
c	What is noise?	
d	What is NRM?	
e	Define connectionless services.	
f	List the types of errors.	
g	Define connct()?	

PART B				
Answer any ONE FULL question from the following				4x15=60
2	a	How does data flow happen? Explain in detail	5	15
	b	Explain TCP/IP model	10	
OR				
3	a	Explain categories of networks	5	15
	b	Write a short note on internet.	5	
	c	Explain network models	5	
OR				
4	a	Explain telephone modem.	15	
OR				
5	a	Explain amplitude modulation and frequency modulation	10	15
	b	Consider an extremely noisy channel in which the value of the signal-to-noise ratio is almost zero. In other words, the noise is so strong that the signal is faint. For this channel the capacity C is calculated as	5	
OR				
6	a	Write about transmission media in detail	15	
OR				
7	a	How connectionless services are provided? Explain.	7	15
	b	Discuss anycast routing in detail.	8	
OR				
8	a	Briefly explain transport service primitives.	7	15
	b	Explain different Berkeley sockets methods in detail.	8	
OR				
9	a	Discuss transport service primitives in detail.	10	15
	b	Write a note on crash recovery at transport layer.	5	
