

GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER 2024

EXAM SEAT NO.

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LEVEL :- Third

PROGRAM : Information Technology

COURSE CODE :- ITH302

COURSE NAME :- Computer Network

MAX. MARKS : 70

TIME : 03 Hrs

DATE :- 30/11/2024

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

QN	S Q N	Question Text	R/ U/ A	Co	Ma rks
Q.1		Attempt any THREE: (2 X 3)			06
	a)	Define baud rate.	R	ITH302-1	02
	b)	List two advantages of mesh topology.	R	ITH302-2	02
	c)	Differentiate between analog and digital signals.	A	ITH302-1	02
	d)	Define peer-to-peer processes in the OSI model.	R	ITH302-3	02
	e)	Enlist various networking devices.	R	ITH302-3	02
Q.2		Attempt any FOUR: (4 X 4)			16
	a)	Explain modes of data communication system.	U	ITH302-1	04
	b)	Draw & explain coaxial cable.	U	ITH302-2	04
	c)	Explain star topology with neat diagram.	U	ITH302-2	04
	d)	Compare between physical address & logical address.	A	ITH302-3	04
	e)	Differentiate between hub & switch	A	ITH302-3	04
	f)	Explain functions of data link layer in OSI model.	U	ITH302-3	04
Q.3		Attempt any TWO: (6 X 2)			12
	a)	Compare between client-server & peer-to-peer architecture.	A	ITH302-1	06
	b)	Differentiate between LAN, MAN, and WAN based on coverage area, speed, and usage.	A	ITH302-2	06
	c)	With a neat diagram, explain the working of the OSI model.	U	ITH302-3	06

P.T.O.

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WINTER / SUMMER- 2024

EXAM SEAT NO.

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QN	S Q N	Question Text	R/ U/ A	Co ITH3 02	Ma rks
Q.4		Attempt any FOUR: (2 X 4)			08
	a)	Differentiate FEC and ARQ?	A	4	
	b)	Define a piconet in Bluetooth communication.	R	4	
	c)	List parts of IPv4.	R	5	
	d)	Define Stream Socket & Datagram Socket.	R	5	
	e)	Explain the role of a User Agent (UA) in email communication.	U	6	
	f)	Define anonymous FTP.	R	6	
Q.5		Attempt any FOUR: (4 X 4)			16
	a)	Compare Single bit error and Burst error	A	4	
	b)	Consider the data unit to be transmitted is- 10011001111000100010010010000100 Consider 8-bit checksum is used. Calculate the checksum at the sender's side using 1's complement arithmetic and verify it at the receiver's end.	A	4	
	c)	Explain Classful addressing	U	5	
	d)	1.You have a network with the IP address 192.168.10.0/24. How many subnets can you create if you use a subnet mask of /26? 2. How many bits need to be borrowed to create 8 subnets from a /24 network?	A	5	
	e)	Differentiate between POP3 and IMAP in terms of how emails are handled.	A	6	
	f)	Briefly describe how MIME enhances the capabilities of email.	U	6	
Q.6		Attempt any TWO: (6 X 2)			12
	a)	Elaborate on Hamming Code with an example. How are redundant bits calculated, and how do they help in detecting and correcting errors?	A	4	
	b)	Write Stream Socket Program	A	5	
	c)	Explain the File Transfer Protocol (FTP) and its significance in file sharing. Include a discussion on its various types like anonymous FTP and FTP Secure.	U	6	
