2.6.1 Provide question papers mapped with COs and BTL during the year 2022-23 and 2023-24

Department of Electronics & Communication Engineering
SoS (E &T), Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

Subject: "Digital Communication"
Subject Code: EC205TPC09

Session: 2022-23 (ODD)

B. Tech. -5th Semester (CBCS)	**Class Test – I**: (August -2022)	**Max. Marks:**15	**Duration:** 01 Hour

Note: Question No. 01 is compulsory and attempt any 03 from questions No. 02,03,04 & 05.

Q. No.		Question	Marks	CO	BTL
1	a	The signal v(t) = cos15πt + 0.5cos20πt is instantaneously sampled. The interval between samples is T_s. find the maximum allowable value for T_s.	[1]	1	3
	b	Draw PAM, PPM and PWM modulation waveform.	[1]	1	2
	c	Encode 1100010 binary data stream into a return to zero and nonreturn to zero Manchester codes.	[1]	2	2
2		Explain noise in Delta Modulation.	[4]	1	2
3		Assuming Q_e (Quantization error) is having uniform Density function and prove that signal to Quantization Noise ratio is (SQNR)dB ≈ (4.8+6n) dB	[4]	1	3
4		Explain with proper diagram concept of Eye Pattern and information obtained from it.	[4]	2	2
5.		Find the Power spectral density of Unipolar NRZ Signaling.	[4]	2	3

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Subject: "CMOS DIGITAL VLSI DESIGN"
Subject Code: EC206TPC11

Session: 2022-23 (EVEN)

B. Tech. -6th Semester (CBCS)	**Class Test – II** (March -2023)	**Max. Marks:**15	**Duration:** 01 Hour

Note: Question No. 01 is compulsory and attempt any 03 from questions No. 02,03,04 & 05.

Q. No.		Question	Marks	CO	BTL
1	a	Explain the Propagation delay in CMOS Inverter.	[1]	2	1
	b	Explain the terms of Noise Margin (V_{IH}, V_{IL}, V_{OH} & V_{OL})	[1]	2	1
	c	Write the different types of Static Logic circuits.	[1]	3	1
2		Explain the Static power dissipation in CMOS	[4]	2	2
3		Explain the Voltage Transfer characteristics (VTC) of the CMOS Inverter.	[4]	2	2

4	In a 2 input CMOS NAND gate $\mu_n C_{ox} = 20\times10^{-6}$ A/V^2 , $\mu_p C_{ox} = 10\times10^{-6}$ A/V^2 $\left(\frac{W}{L}\right)p = \left(\frac{W}{L}\right)n = 20$, $V_{t0,n}$ = 1Volt, $V_{t0,p}$ = -1Volt, V_{DD} = 5 Volt, capacitance =20pf. Calculate the τ_{PHL} and τ_{PLH}.	**[4]**	2	3
5.	Describe the threshold voltage of 2 - input NAND gate.	**[4]**	3	3

Department of Electronics & Communication Engineering

SoS (E &T), Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

Subject: "Digital Communication"

Subject Code: EC205TPC09

Session: 2023-24 (ODD)

B. Tech. -5th Semester (CBCS)	**Class Test – II**: (October -2023)	**Max. Marks:**15	**Duration:** 01 Hour

Note: Question No. 01 is Compulsory.

Q. No.		Question	Marks	CO	BTL
1	**a**	Draw the Block diagram of Non-Coherent Detection of ASK signaling.	**[2]**	2	2
	b	What is Line coding? List out any 04 Properties.	**[2]**	3	2
	c	Draw the Manchester Coding Waveform for **1011101**	**[1]**	2	2
2		Explain the Unipolar, Polar, and Bi-polar Line coding with the data **110010.**	**[5]**	2	3
		OR			
		Explain the concept of Eye Pattern and the information obtained from it.	**[5]**	2	3
3		Explain the Amplitude Shift Keying (ASK) modulation technique with its Energy per bit requirement, Bandwidth, and Constellation Diagram.	**[5]**	3	3
		OR			
		Explain the Phase Shift Keying (PSK) modulation Technique with message signal **100101** transmission.	**[5]**	3	3

Department of Electronics & Communication Engineering

SoS (E &T), Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

Subject: "Wireless Sensor Networks"

Subject Code: EC208TPE17

Session: 2023-24 (Even)

B. Tech. -8th Sem (New) (CBCS)	**Class Test – I**: (January -2024)	**Max. Marks:**15	**Duration:** 01 Hour

Note: Question No. 01 is Compulsory and attempt any 02 questions from 2,3, and 4.

Q. No.	Question	Marks	CO	BTL
1	i. A sensor network is subjected to a unique set of resource constraints such as : a) Finite onboard battery power b) Limited network communication Band Width c) Radio maintenance unit d) both a and b e) both b and c	**1**	1	1
	ii. Write the difference between a Wireless Sensor Network (WSN) and a Mobile Ad Hoc Network (MANET)	**2**	1	2

	iii. Write the name of the 07 layers of the OSI model and list out the different types of network topology.	**2**	1	2
2	Explain the Design Challenges of Wireless Sensor Networks.	**5**	1	2
3	Draw the Architecture of the Sensor Node and briefly describe its components.	**5**	1	3
4	Explain in detail the Factors Influencing WSN Design.	**5**	1	3

2.6.2 Provide documents related to attainment of Programme outcomes, Programme specific outcomes and course outcomes during the year 2022-23 and 2023-24

CO attainment through Cumulative Direct and Indirect Assessment

Batch	:	**2020-2024**
Course Code-Name of the course	:	**EC206TPC11 CMOS DIGITAL VLSI DESIGN**
Academic Year	:	**2022-2023 [EVEN SEWMESTER]**
Semester	:	**VI SEMESTER**

CO attainment through Cumulative Internal Examinations (IA) & End Semester Examination (ESE)

Course	COs	Internal Examination (IA)		End Semester Examination (ESE)		30% of IA and 70% of ESE		Target (%)	Attainment Yes/No
		Attainment	Level	Attainment	Level	Attainment	Level		
EC206TPC11 CMOS DIGITAL VLSI DESIGN	CO1	48.48	2	77.27	3	68.64	2.70	60	**Yes**
	CO2	45.45	2	84.85	3	73.03	2.70	60	**Yes**
	CO3	54.55	2	80.30	3	72.58	2.70	60	**Yes**
	CO4			74.24	3	74.24	3	60	**Yes**
	CO5	80.30	3	48.48	2	58.03	2.30	60	**No**

CO attainment through Cumulative Direct and Indirect Assessment

Batch	:	**2021-2025**
Course Code-Name of the course	:	**EC205TPC09 DIGITAL COMMUNICATION**
Academic Year	:	**2023-2024 [ODD SEWMESTER]**
Semester	:	**V SEMESTER**

CO attainment through Cumulative Internal Examinations (IA) & End Semester Examination (ESE)

Course	COs	Internal Examination (IA)		End Semester Examination (ESE)		30% of IA and 70% of ESE		Target (%)	Attainment Yes/No
		Attainment	Level	Attainment	Level	Attainment	Level		
EC205TPC09 DIGITAL COMMUNICATION	CO1	79.66	3	64.41	3	68.98	3.00	60	**Yes**
	CO2	83.05	3	88.14	3	86.61	3.00	60	**Yes**
	CO3	84.75	3	57.63	2	65.76	2.30	60	**Yes**
	CO4			61.02	3	61.02	3	60	**Yes**
	CO5	57.63	2	83.05	3	75.42	2.70	60	**Yes**