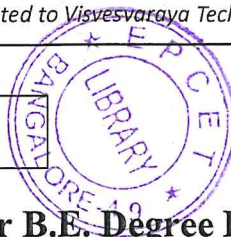


**EAST
POINT****COLLEGE OF ENGINEERING &
TECHNOLOGY**

An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi

USN

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EPESK104C/EPESK204C

First/Second Semester B.E. Degree Examination, July 2025
INTRODUCTION TO ELECTRONICS COMMUNICATION

TIME:3 hrs.

Max.Marks:100

Note: 1. Answer any FIVE full questions, choosing ONE question from each MODULE**2. M: Marks, L: Bloom's level, C: Course outcomes.**

		Module-1	M	L	C
Q.1	a	With a neat circuit diagram and waveform. Explain the working operation of full wave bridge rectifier.	8	L2	CO1
	b	What is multistage amplifier? Show that the overall gain of multistage amplifier is product of individual stage gains.	8	L3	CO1
	c	An amplifier provides an output voltage of 5V for a input of 100mV. If the input and output currents are 4mA and 200mA. Find voltage, current and power gain.	4	L3	CO1
OR					
Q.2	a	Make use of circuit diagram. Explain the operation of voltage tripler.	6	L3	CO1
	b	Discuss the load and line regulation using Zener diode with neat circuit diagram and appropriate expressions.	6	L2	CO1
	c	What are the advantages of negative feedback? Derive an expression for overall voltage gain of negative feedback amplifier.	8	L3	CO1
Module-2					
Q.3	a	An operational amplifier operating with negative feedback produces an output voltage of 2V when supplied with an input of 400uV. Determine the value of closed-loop voltage gain and express the answer in decibels.	5	L3	CO2
	b	What is a multivibrator. Explain the single state astable oscillator with circuit diagram.	8	L1	CO2
	c	Explain with the help of circuit diagram the operation of a crystal oscillator. Why these oscillators give highly stable oscillations. Mention applications of crystal oscillator.	7	L2	CO2
OR					
Q.4	a	Sketch the circuit of each of the following and briefly explain them based on the use of Operational amplifiers. i)Voltage follower ii)Differentiator.	10	L2	CO2
	b	Define the following terms with respect to the op-amp: i)CMRR ii)Slew rate iii)Supply voltage rejection ratio iv)Input offset voltage v) Input offset current	10	L2	CO2

Module-3

Q.5	a	Convert the following: i) $(FACE)_{16} = ()_{10}$ ii) $(65.45)_{10} = ()_2$ iii) $(1111011011011.11011)_2 = ()_8$ iv) $(2604.10546875)_{10} = ()_{16}$ v) $(357.14)_8 = ()_{16}$.	10	L3	CO3
	b	Implement full adder using two half adders and one OR gate. Write the equation for Sum and Cout.	10	L3	CO3

OR

Q.6	a	Perform the following : i) $(1010100)_2 - (1000100)_2$ using 1's complement and 2's complement method. ii) $(4456)_{10} - (34234)_{10}$ using 9's complement and 10's complement method.	8	L3	CO3
	b	Write any four Boolean theorems and Identities.	8	L1	CO3
	c	Realize an OR logic gate using Diodes.	4	L2	CO3

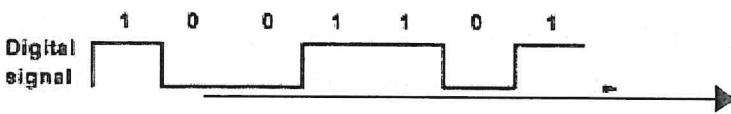
Module-4

Q.7	a	What is an Embedded System? Compare Embedded system and General computing system.	7	L2	CO4
	b	Make use of neat diagrams, explain instrumentation and control system.	7	L2	CO4
	c	Discuss major application areas of embedded systems with examples.	6	L2	CO4

OR

Q.8	a	Briefly note on Core of Embedded system. Bring out the difference between microprocessor and microcontroller.	8	L2	CO4
	b	Explain the working operation of LED with a suitable diagram.	7	L2	CO4
	c	What are sensors, & actuators.	5	L2	CO4

Module-5

Q.9	a	Define noise and explain the various kinds of noises.	10	L2	CO5
	b	Explain the advantages of digital communication over analog communication.	4	L1	CO5
	c	Construct ASK, FSK and PSK waveform by considering the following binary data : (refer Fig Q9(c)) <div style="text-align: center;">  <p>Fig Q9(c)</p> </div>	6	L2	CO5

OR

Q.10	a	Explain how mobile communication has evolved to support multimedia and IoT applications, from 3G to 5G, and describe how 6G is expected to further enhance these capabilities.	10	L2	CO5
	b	What is multiplexing? Explain different types of multiplexing in communication system.	10	L2	CO5
