QPC: RJ19BTECH183 AR 19 Reg. No

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fourth Semester – Regular) Examinations, June – 2021

BPCEL4040 / BPCEE4040 ANALOG AND DIGITAL ELECTRONIC CIRCUITS

(Common to EE and EEE)

Time: 2 hrs Maximum: 50 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) **(1 x 10 = 10 Marks)**

Q.1. Answer ***ALL*** questions		[CO#]	[PO#]
a.	Photodiode is used in the detection of	1	1
	(i)visible light (ii)Invisible light		
	(iii)No light (iv)Both visible and invisible light		
b.	In ideal Differential Amplifier ,if same signal is given to both inputs, then output will be	1	1
	(i)same as input (ii)double the input		
	(iii)Not equal to zero (iv)Zero		
c.	Which of the following material can be used to produce infrared LED?	1	1
	(i)Si (ii)GaAs		
	(iii)Cds (iv)Pbs		
d.	An ideal op-amp requires infinite bandwidth because	2	1
	(i)signal can be amplified without attenuation (ii)output common-mode noise voltage is zero		
	(iii)output voltage occurs simultaneously with input voltage changes (iv)Output can drive infinite number of devices		
e.	When a differential amplifier is operated single-ended,	2	1
	(i)the output is grounded (ii)one input is grounded and signal is applied to the other		
	(iii)both inputs are connected together (iv)the output is not inverted		
f.	What does ASCII stand for?	3	1
	(i)American Standard Code for Information Interchange (ii)American Scientific Code for Information Interchange		
	(iii)American Scientific Code for Interchanging Information (iv)American Standard Code for Interchanging Information		
g.	Which of the following combinations of logic gates can decode binary 1101?	3	1
	(i)One 4-input AND gate (ii)One 4-input AND gate, one inverter		
	(iii)One 4-input AND gate, one OR gate (iv)0ne 4-input NAND gate , one inverter		
h.	The ALU gives the output of the operation and the output is stored in the	3	1
	(i)Memory devices (ii)Registers		
	(iii)Flags (iv)Output unit		
i.	One example of the use of an S-R flip-flop is as	4	1
	(i)Transition pulse generator (ii)Racer		
	(iii)Switch debouncer (iv)Astable oscillator		
j.	What is meant by the parallel load of a shift register?	4	1

(i)All FFs are preset with data (ii)Each FF is loaded with data, one at a time

(iii)Parallel shifting of data (iv)All FFs are set with data

PART – B: (Short Answer Questions) (2 x 5 = 10 Marks)

Q.2. Answer ***ALL*** questions	[CO#]	[PO#]
a. Draw a block diagram of series voltage regulator?	1	1
b. What is meant by quiescent point?	1	1
c. Write an application of monostable multivibrator	2	1
d. What is known as gray code and write any 2 examples of gray with decimal equivalent?	3	1
e. What is the use of multiplexer in combinational logic design?	4	1

PART – C: (Long Answer Questions) (6 x 5 = 30 Marks)

Answer ***ANY FIVE*** questions	Marks	[CO#]	[PO#]
3. Write a short notes on LED	(6)	1	1
4. Write a Comparison of BJT with FET	(6)	1	1
5. Explain the integrator with derivation.	(6)	2	1
6. Brief notes on IC741 Specification.	(6)	2	1
7. Represent the decimal number (a) 396 and (b) 4096 in binary form in i. Binary code ii. BCD code iii. Excess-3 code iv. Octal code v. Hex code	(6)	3	2
8. Simplify the following Boolean function F(A,B,C,D) = Σ(0,1,2,5,8,9,10) in (a) sum of product and (b) product of sums.	(6)	3	2
9. Design a 3-bit synchronous counter using J-K FLIP-FLOPS	(6)	4	2
10. Write a short notes on SISO, SIPO, PIPO, PISO with diagram.	(6)	4	1

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