FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2018

SUBJECT: ELECTRONICS SYSTEMS CODE. NO: 124

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1.		Doping	1	5
2		7815	1	
3		Voltage divider biasing	1	
4		NAND	1	
5		CRO	1	
6		Any two advantages	2	2
7		Energy band diagram of Si (E_g = 1.12eV) and Ge (0.72eV)	2	2
8		Circuit diagram of voltage divider biasing	2	2
9.		Short notes on TDM	2	2
10		Circuit diagram of Common Source FET amplifier	2	2
11		Avalanche break down, Zener break down	½ each	1
		Difference	1	1
12		Symbol of phototransistor, thermistor	1 each	2
13		SCR - Speed control Varactor diode - Frequency selection	4 × ½	2

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		LED - Seven segment display photodiode - burglar alarm		
14		$V_{max} = \sqrt{2} \times V_{rms} = \sqrt{2} \times 6 = 8.49V$	1½	3
		Frequency $= \frac{1}{T} = \frac{1}{10msec} = 100\,Hz$	1½	
15		Any three points	3	3
16		Sketch the 3 waveforms	3×1	3
17		Circuit diagram of Half wave rectifier with capacitor filter	1½	3
		Working	1½	
18	a	Truth Table of Ex-OR	1	3
	b	Truth Table of Half adder	1	
		Circuit diagram of Half adder	1	
19		$R_1 = 100\Omega \pm 5\%$, $R_2 = 270\Omega \pm 5\%$, $R_3 = 3.3K\Omega \pm 5\%$	1	4
		$R_{eff} = 3373\Omega\ [(R_1 \| R_2) + R_3]$	3	
20	a)	Forward characteristics	1	4
		mark knee voltage	1	
	b)	Dynamic resistance	2	
21		K maping	2	4
		Grouping	1	
		Equation	1	

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22		Circuit diagram	2	4
		Explanation	2	
23		Symbol	1	4
		Structure	3	
24	a)	Potential difference	1	5
	b)	$R_{eff} = 7.4\,\Omega$	1	
		$I_{TOT} = 1.89\,A$	1	
		$I_1 = 1.13\,A$	1	
		$I_2 = 0.76\,A$	1	
25		Comparison of CE, CB & CC (Compare any 4 parameters)	5	5
26	a)	Working principle of galvanometer	2	5
	b)	Conversion to ammeter	1½	
		Conversion to voltmeter	1½	
27		Block diagram	3	5
		Waveforms	2	

Veena.C

Ambili.K

Nathera. M.A.