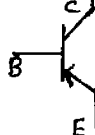
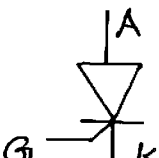


FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2019

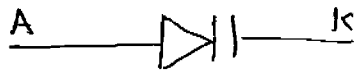
SUBJECT : ELECTRONICS


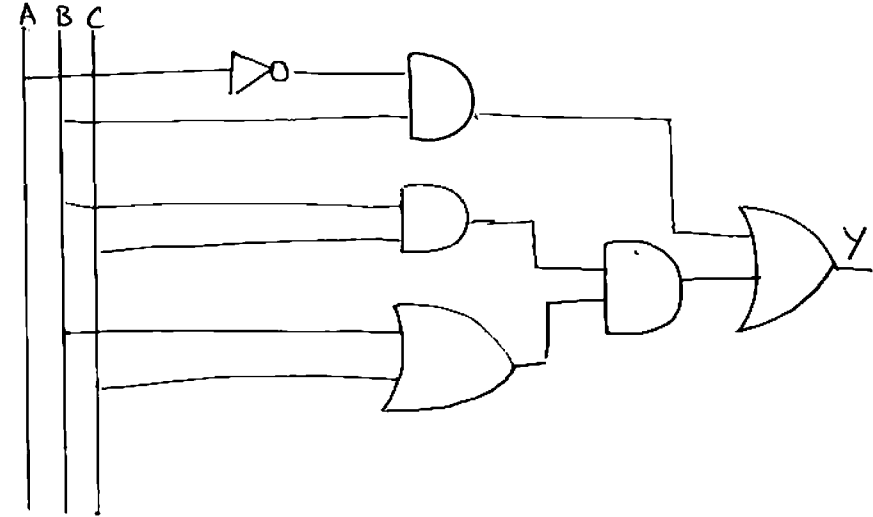
CODE. NO: FY 31

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1		Passive - Resistor - Capacitor Active - Diode Transistor	1	1
2		$R = \frac{R_1 R_2}{R_1 + R_2} = \frac{100 \times 200}{300} = 66.66 \Omega$	1	1
3		Electrons	1	1
4		0.7V	1	1
5	a		1	1
	b		1	
6		2Vm	1	1
7		CE configuration	1	1
8		Positive feedback	1	1
9		16	1	1
10		Ammeter	1	1
11	a	60°	1	2
	b	Inverting Mode	1	
12		The heat generated in CB junctions due to increased IC causes the junctions to breakdown	2	2

Q No.	Sub Q	Answer key	Score	Total
13		$X_C = \frac{1}{2\pi fC}$, when f increases, X_C decreases. So for DC, capacitor acts as a short	2	2
14		Any two difference between FET and BJT	2	2
15		V-I Graph of Zener diode	2	2
16		At $0^\circ K$, there are no free charge carriers in intrinsic semiconductor	2	2
17	(a)	$200 K \Omega \pm 5\%$	1	2
	(b)	$3.6 M \Omega \pm 20\%$	1	
18	(a)	$X_C = \frac{1}{2\pi fC}$	1	3
	(b)	One point each on any two types of capacitors	2	
19		Classification of Solids	2	3
		Examples	1	
20		$\alpha = \frac{\beta}{1+\beta}$	$\frac{1}{2}$	3
		$\beta = \frac{\alpha}{1-\alpha}$	$\frac{1}{2}$	

3/4

Q. No	Sub No	Answer key	Score	Total
21	(a)		1	3
	(b)	working (Any 4 points)	2	
22	(a)	Logic circuit of half adder	2	3
	(b)	$S = A + B$ $C = A \cdot B$	1	
23		Internal diagram of CRT	3	3
24		Wien Bridge Oscillator ekf diagram	2	4
		working	2	
25	(a)	Frequency response curve	2	4
	(b)	Band width (Any two points or equation)	2	
26	(a)	Circuit diagram of Bridge Rectifier	2	4
	(b)	working	$\frac{1}{2}$	
		o/p wave form	$\frac{1}{2}$	
27	(a)	Any two difference between avalanche breakdown and Zener breakdown	2	4
	(b)	working of Zener diode as voltage regulator	2	

28		$V_{rms} = \frac{V_m}{\sqrt{2}} = \frac{282}{\sqrt{2}} = 200V$	2	4
		$V_{av} = \frac{2V_m}{\pi} = \frac{2 \times 282}{\pi} = 180V$	2	
29	(a)	Kirchhoff's Voltage law	2	5
	(b)	$R_1 // R_2 = 20\Omega$ $R_3 // R_4 = 10\Omega$ Total = 80Ω	3	
30	(a)	Circuit diagram	2	5
		working as a switch	2	
	(b)	less than 0.7V	1	
31	(a)		2	
	(b)	 $Y = \bar{A}B + BC(B+C)$	3	5