

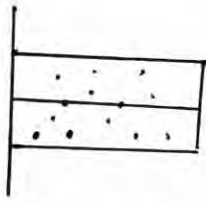
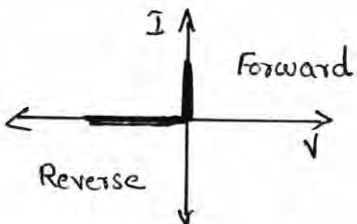
FIRST YEAR HIGHER SECONDARY EXAMINATION MARCH 2017

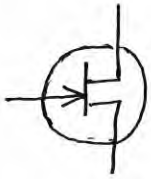
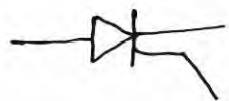
SUBJECT : ELECTRONICS

CODE. NO: 623

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
1		Mobile phone, Computer, RADAR, ECG (Any four)	$4 \times \frac{1}{2}$	2
2	a	$47 \times 10^3 \pm 5\% = 47k\Omega \pm 5\%$	2	4
	b	5% $47k\Omega = 2.35k\Omega$ $44.65k\Omega$ and $49.35k\Omega$	2	
3	a	<u>Ideal</u> • Zero internal resistance • o/p voltage = i/p voltage <u>Practical</u> • It has some internal resistance • o/p voltage less than i/p voltage (Any related two points)	(2)	3
	b	0	1	
4		1) Peak voltage = 5V 2) $V_{rms} = \frac{V_m}{\sqrt{2}} = \frac{5}{\sqrt{2}} = 3.54$ 3) $2\pi f = 628 \times 10^3$ $f = \frac{628 \times 10^3}{2\pi} = 100 \text{ kHz}$ $2T = \frac{1}{f} = \frac{1}{100 \times 10^3} = 0.01 \text{ ms}$ 4) $\phi = 30^\circ$	4×1	4

1/5

Qn No	Sub Qns	Answer Key/Value Points	Score	Total
5	a	Very large or greater than 3 eV	1	3
	b		1	
	c	Conduction band	1	
6		Boron, Gallium, Indium, Aluminium (Any two)	$2 \times \frac{1}{2}$	1
7	a	Silicon = 0.7V Germanium = 0.8V	$2 \times \frac{1}{2}$	2
	b	0	1	
8		$5 - (0.7 \times 2) = 3.6V$	2	2
9			1+1	2
10	a	Emitter, Base, Collector	1	4
	b	Emitter	1	
	c	Collector	1	
	d	Amplifier, switch	$\frac{1}{2} \times 2 = 1$	

Qn No	Sub Qns	Answer key / Value points	Score	Total
11		High voltage gain and high current gain OR High power gain	2	2
12	a	 npn transistor		
	b		4 x $\frac{1}{2}$	2
	c			
	d			
13		TRIAC - motor speed control LDR - Light detection LED - Electricity to light conversion Thermistor - Temperature measuring	4 x $\frac{1}{2}$	2
14	a	Diode	1	
	b	To reduce the line voltage to the desired level	2	5
	c	The capacitor is a filter and it removes the ripples	2	

Qn No	Sub Qns	Answer key / Value points	Score	Total
15		81.2 %	1	1
16	a	Gain = $\frac{\text{o/p voltage}}{\text{i/p voltage}}$	1	
	b	$\text{o/p} = 100 \sin 100 \pi t$	2	4
	c	$30 \times 20 = 600$	1	
17		R_E	1	1
18	a	Radio, TV, Radar, Mobilephone (any two)	$2 \times \frac{1}{2}$	1
	b		1×2	4
	c.	resistive loss in feed back circuit	1	
19		positive	1	1
20		360°	1	1
21	a	16	1	
	b	$2 \times 4^2 + 3 \times 4^1 + 1 \times 4^0 = 32 + 12 + 1 = (45)_{10}$	2	3
22	a	$(100010)_2$ (steps needed)	2	
	b	$(22)_{10}$ (steps needed)	2	4
23		CRO	1	1

Qn No	Sub ans.	Answer key / Value points	Score	Total
24		The number of divisions along x-axis within one cycle multiplied by the reading on the time/div knob, we get time period $f = \frac{1}{T}$ Baiju Baiju. A.J. HSST (Electronics) SAHSS karimkunnam <u>Viphy</u> Viphy markose HSST- Electronics Govt HSS manayamuttom	2	2