

ANSWER KEY

First... YEAR HIGHER SECONDARY EXAMINATION 2021 *September*

PART-I/II/III

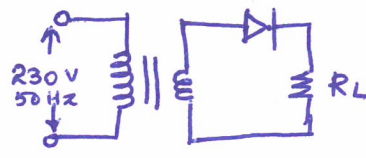
SUBJECT: *ELECTRONIC SYSTEMS*.....

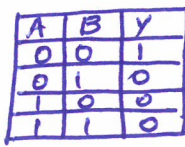
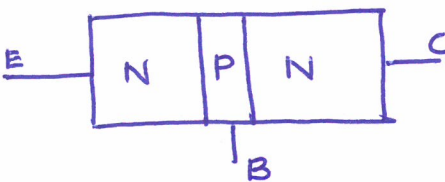
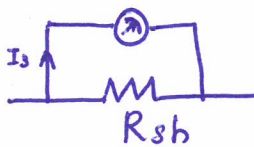
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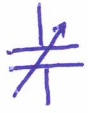
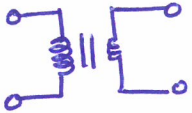
VERSION: *...*

60... SCORES

....*2*... HOURS

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
1	(i) (ii) (iii) (iv)	active 0.482 reverse logical addition	1 1 1 1	4
2		any two applications	2	2
3		KVL statement	2	2
4	(a) (b)	Addition of Impurity Arsenic	1 1	2
5		any two points	2	2
6		Circuit diagram of forward biased P-N junction	2	2
7		 - air core  - iron core	(1) (1) 2	2
8		+5V - IC 7805 -12V - IC 7912	(1) (1) 2	2
9			2	2

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
10		power supply block diagram	2	2
11		symbol  (1) Truth table  (1)	2	2
12			2	2
13		frequency response of RC coupled amplifier	2	2
14		Any two applications of LED	2	2
15			2	2
16		Any two applications of nano technology.	2	2
17			2	2
18		Defenitcon of Amplitude Modulation	2	2
19	(a)	Ohms law $V = IR$	2	3
	(b)	$I = 2.5A$	1	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
20		$V_{rms} = \frac{V_m}{\sqrt{2}} = \frac{8}{\sqrt{2}} = 5.65 \text{ V} \quad (1)$ peak to peak voltage = 16V (1) frequency = $\frac{1}{T} = \frac{1}{20 \text{ ms}} = 50 \text{ Hz} \quad (1)$	3	3
21.	(a)	 - variable capacitor	1	3
	(b)	 - variable resistor	1	
	(c)	 - step down transformer	1	
22	(a)	1 kΩ ± 5% - Brown, Black, Red, Gold	1	3
	(b)	2.2 kΩ ± 10% - Red, Red, Red, silver	1	
	(c)	100 kΩ ± 5% - Brown, Black, yellow, Gold	(1)	
23		symbol -  (2) Application - voltage regulator (1)	3	3
24		Circuit diagram of Bridge rectifier	3	3
25		Working of transistor as an open switch (1½) Working of a transistor as a closed switch (1½)	3	3
26		Need for biasing three points	3	3

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Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
27		Voltage divider biasing circuit	3	3
28	(a)	photo diode -  (1/2)	3	3
	(b)	Thermistor  (1/2)		
	(c)	Varactor diode  1/2		
		Applications (1/2 + 1/2 + 1/2)		
29		Implementation of AND, OR & NOT gates using NAND	3	3
30		Block diagram of Function generator	3	3
31		Basic concepts of analog multimeter (1 1/2) digital multimeter (1 1/2)	3	3
32		Need for modulation (3 points)	3	3
33	(a)	KCL definition	2	4
	(b)	$I_1 + I_4 + I_6 = I_2 + I_3 + I_5$ $5 + 6 + I_6 = 3 + 2 + 8$ $I_6 = 2A$	2	
34		Classification based on energy band diagram	4	4
35		V-I characteristics of a diode	4	4
36	(a)	Circuit of a centre tapped rectifier	3	4
	(b)	input and output waveforms	1	
37	(a)	output characteristics of a transistor in CE configuration	2 1/2	4
	(b)	Marking of different regions of operations	1 1/2	

Qn. No	Sub Qns	Answer Key/Value Points	Score	Total Score
38	(a) (b)	Circuit of Rc coupled amplifier input and output waveforms	3 1	4
39		Circuit of astable multivibrator (3) output waveform (1)	4	4
40	(a) (b)	Symbol and truth table of AND gate (1½) symbol and truth table of NOT gate (1½) AND - IC 7408 (½) NOT - IC 7404 (½)	3 1	4
41	(a) (b)	Half adder use Circuit diagram (2) truth table (1)	1 3	4
42		Block diagram of CRO	4	4