AAFAQ ACADEMY – KASUR

Paper: Physics **Chapter (18)** **Class: F.Sc. Part – II**

ELECTRONICS

Name: _____ Roll No: (in words) _____

EVENING GROUP

OBJECTIVE TYPE

Total Marks: 12 **Paper Code: _____** **Total Time: 10 Minutes**

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

Q.No.1: You have four choices for each objective type question as A,B,C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	P-types germanium is obtained by doping intrinsic germanium with	Tri – valent impurity atoms	Tetra – valent impurity atoms	Penta – valent impurity atom	None of these
2.	For rectification we use	Choke	Diode	Transformer	Capacitor
3.	Donor impurities donates	Electrons	Holes	Electrons and holes	None of these
4.	Which one of the following is not a semi – conductor?	Silicon	Germanium	Copper	Gallium – arsenide
5.	The p-n junction on forward – biasing act as	High resistor	Capacitor	Inductor	Low resistor
6.	In manufacturing of transistor, usually	Emitter is smaller than collector	Base is smaller than both emitter and collector	Impurity in emitter is more than that of collector	All of above
7.	The current gain of transistor whose base current is 100 μA and collector current is 100mA will be	10^{-3}	10^{3}	100	1
8.	Transistors can be used as	Amplifier	Switch	Oscillator	All of these
9.	Operational amplifier can be used as	Comparator	Inverting amplifier	Non – inverting amplifier	All of these
10.	OR – gate can only display an output when one of its input must be at	**0**	**1**	**0 or 1**	None of these
11.	The gain of an inverting amplifier having external resistance R_1 = 50KΩ and R_2 = 200 KΩ will be	$-0 \bullet 25$	$-2 \bullet 0$	$2 \bullet 0$	$-4 \bullet 0$
12.	Tick the sensor among the following	LDR	Thermistor	Photo diode	All of above

SUBJECTIVE TYPE

Total Marks: 18 **Time Allowed: 0 Hours 40 Minutes**

SECTION – I (SHORT QUESTIONS)

2. Attempt any FIVE questions. (5×2=10)Marks

i. What is biasing requirements of the junction of a transistor for its normal operation? Explain how these are met in common emitter amplifier.

ii. How does the motion of an electron in an n-type substance differ from the motion of holes in p-type substance?

iii. What is the net charge on an n-type and p-type substances?

iv. Why ordinary silicon diodes do not emit light?

v. Why is base current in a transistor very small?

vi. What is effect of forward and reverse biasing of a diode on the width of depletion region?

vii. The inputs of a gate are 1 and O. Identify the gate if its output is (a) O, (b) 1.

SECTION – II (ESSAY TYPE) Attempt given question

3. Do as directed...

i. How operational amplifier does is used as comparator? And narrate how can comparator be used to design night switch? (5)

ii. Calculate the output of the op-amp circuit shown in figure. (3)

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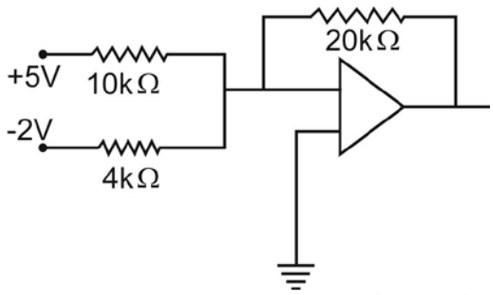

SECTION – III (Practical)

4. (a) Write answer of TWO questions. (2×2=4)

i. a
ii. c
iii. v
iv. b

4. (b) Write procedure to determine the resistance of voltmeter by graph method. (3)

(OR)

Write procedure to find the unknown high resistance by using neon flash lamp. (3)

4. (c) Answer the following questions on the basis of graph drawn between potential difference (V) and charge (Q). (4)

i. What you conclude from the graph?
ii. Find the capacitance of capacitor from the graph.

Good Luck
Ch. Khalid Mahmood Ashraf