

TALEEMI DUNYA

Test Syllabus: Unit # 7

St. Name		Test	PHYSICS	T. Marks	30	Time	60 Min
F.Name		Class	12 th	T. Code	U#7	T. Date	

NOTE: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that Question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question. **6.**

1	When a pn-junction is reverse biased the depletion region is:						
(a)	Widened	(b)	Narrowed	(c)	Normal	(d)	None of these
2	Photovoltaic cell is formed from:						
(a)	Arsenic	(b)	Carbon	(c)	Germanium	(d)	Silicon
3	Which component of the transistor has greater contraction of impurity:						
(a)	Base	(b)	Emitter	(c)	Collector	(d)	Emitter and Collector
4	For non-inverting amplifier if $R_1 = \infty \Omega$, $R_2 = 0 \Omega$ then gain of amplifier is:						
(a)	-1	(b)	0	(c)	+1	(d)	Infinite
5	LDR becomes necessary when op-amp is used as a:						
(a)	Night switch	(b)	Inverter	(c)	Rectifier	(d)	Comparator
6	In a comparator circuit, when intensity of light decreases, then resistance of LDR:						
(a)	R_L increases	(b)	R_L decreases	(c)	V_R decreases	(d)	V_- increases

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Q.2 Write short answers of the following questions.

(8x2=16)

1. Define depletion region and potential barrier.
2. What is potential barrier in a p-n junction?
3. What is the role of potential barrier in a diode. How is it formed in a diode?
4. How the current flows in forward and reverse biased diode?
5. What is the biasing requirement of the junction of a transistor for its normal operation?
6. Write some important uses of operational amplifier.
7. Write briefly about operational amplifier.
8. What is the principle of virtual ground? Write the gain of inverting amplifier.

Q.3 Write long answers of the following questions.

(4+4=8)

- (a) What is meant by rectification explain full wave rectification by bridge rectifier. What is the use of a filter circuit?
- (b) What is operational amplifier? Discuss the action of op.amp as inverting and non-inverting amplifier. Also calculate voltage gain in each case.