MCQs Related to Article "18.1 BRIEF REVIEW OF PN-JUNCTION AND ITS CHARACTERISTICS"								
PN-JUNCTION								
1. A potential barrie	er of 0.7 v exist	across the pn-	junction made	from:				
(a) Indium	(b) gerr	ninium	(c) Silicon	(d) galliı	ım			
2. Which type of imp	purity is to be a	idded to a pur	e semi-conducto	or crystal to pr	ovide holes			
(a) Monovalent	(b) Triv	alent	(c) Pentavalent	(d) Tetra	avalent			
3. The potential diff	ference across t	the depletion i	region of germa	nium at 300 K	is			
(a) 0.5 V	(b) 0.6	V	(c) 0.7 V	(d) 0.3 V	•			
4. In n-type materia	ls, the Minority	y carriers are:						
(a) Free electrons	(b) Hole	es	(c) Protons	(d) Meso	on			
5. Diode is a device	which has	terminals.						
(a) One	(b) Two	)	(c) Three	(d) Four				
<u>BIASING</u>								
6. When a pn-junction		_	_					
(a) Widened	(b) Nar		(c) Normal	(d) No cl	nange			
7. The forward curr	•			due to				
(a) Minority carriers	. , ,	ority carriers	. ,	(d) Elect	rons			
8. The reverse curre								
(a) Minority carriers		-	(c) Holes	(d) Elect	rons			
9. The reverse curre	~ .	•						
(a) Zero			current (c) Great	ter than forward	d current			
10. The reverse or lea			of the order of					
(a) Microampere		i-ampere	(c) Both		e of these			
11. Pulsating DC can			ircuit known as	:				
(a) Filter	(b) Tan		(c) Acceptor	(d) Rejec				
MCQ # 1: (c)				MCQ # 5: (b)	MCQ # 6: (a)			
MCQ # 7: (b)	MCQ # 8: (a)	MCQ # 9: (b)	MCQ # 10: (a)	MCQ # 11: (a)				
MCQs Related to Arti	cle "18.2 RECT	MCQs Related to Article "18.2 RECTIFICATION"						
1 AC can be convert	ted to DC by:	1170	TPIE					
1. AC can be convert	-	erator	(c) Motor	(d) Recti	fier			
(a) Transformer	(b) Gen		(c) Motor	(d) Recti				
<ul><li>(a) Transformer</li><li>2. The process in wh</li></ul>	(b) Gen hich only half c	ycle of AC sign	al is converted	to DC is called:				
<ul><li>(a) Transformer</li><li>2. The process in wh</li><li>(a) Filtration</li></ul>	(b) Gen <b>hich only half c</b> (b) Half	ycle of AC sign wave Rectifica		to DC is called:				
<ul><li>(a) Transformer</li><li>2. The process in who</li><li>(a) Filtration</li><li>3. The number of di</li></ul>	(b) Gen hich only half c (b) Half odes in a half v	ycle of AC sign wave Rectifica	al is converted tion (c) Full v	to DC is called: wave Rectification				
<ul><li>(a) Transformer</li><li>2. The process in who</li><li>(a) Filtration</li><li>3. The number of di</li><li>(a) 2</li></ul>	(b) Gen hich only half c (b) Half odes in a half w (b) 3	ycle of AC sign wave Rectifica vave rectifier:	al is converted tion (c) Full v	to DC is called: wave Rectification (d) 1	on			
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(c) Photo Diode

(b) Intensity of light (c) Frequency of light (d) Energy

(d) None of these

(b) LED

6. In photovoltaic cell, current is directly proportional to:

(a) Transistor

(a) Interference of light

## MCQs Related to Article "18.4 TRANSISTOR" 1. The central region of a transistor is called: (a) Collector (c) Base (d) Neutral (b) Emitter 2. The term transistor means: (a) Transfer of current (b) Transfer of heat (c) Transfer of heat (d) Transfer of voltage 3. The transistor are made from (a) Plastic (b) Metals (c) Insulators (d) Doped semiconductors 4. Transistor has: (d) 1 region (a) 2 regions (b) 3 regions (c) 4 regions 5. Transistor is a device which has \_ \_terminals. (a) One (b) Two (c) Three (d) Four 6. Base of the transistor is very thin of the order of: (a) $10^{-2} m$ (b) $10^{-4} m$ (c) $10^{-6} m$ (d) $10^{-8} m$ 7. The SI unit of current gain is: (a) Ampere (b) Volt (c) Coulomb (d) No unit MCQ # 2: (c) MCQ # 3: (d) MCQ # 4: (b) MCQ # 5: (c) MCQ # 1: (b) MCQ # 6: (c) MCQ # 7: (d) MCQs Related to Article "18.5 TRANSISTOR AS AN AMPLIFIER" 1. A device which converts low voltage or current to high voltage or current is called: (a) Transformer (b) AC-generator (c) Rectifier (d) Amplifier 2. For typical transistor as an amplifier, the voltage gain: (b) $\frac{\Delta V_o}{\Delta V_{in}} = \beta$ $(c)\frac{\Delta V_o}{\Delta V_{in}} = \frac{\beta \ r_{ie}}{R_c}$ (a) $\frac{\Delta V_o}{\Delta V_{in}} = \frac{\beta R_c}{r_{ie}}$ (d) None of these 3. An expression for current gain of a transistor is given by: (d) $\beta = \frac{I_C}{I_R}$ (b) $\beta = I_B - I_C$ (c) $\beta = I_B + I_C$ 4. The gain of transistor amplifier depends upon: (b) Resistance connected with collector (a) Resistance connected with emitter (c) Resistance connected with base (d) None of these 5. Which of the following is true for a transistor: (c) $I_E = I_B + I_C$ (d) $I_E = \frac{I_B}{I_C}$ (a) $I_E = I_B - I_C$ (b) $I_E = I_C - I_B$ 6. Transistor can be used as (c) Memory unit (a) Oscillators (b) Switches (d) All of them MCQ # 1: (d) MCQ # 2: (a) MCQ # 3: (d) MCQ # 4: (b) MCQ # 5: (c) MCQ # 6: (d) MCQs Related to Article "18.7 OPERATIONAL AMPLIFIERS" 1. A complete amplifier circuit made on a silicon chip and enclosed in a small capsule is called: (a) Diode (c) Resistor (d) Operational amplifier 2. The open loop gain of an operational amplifier is of the order of (d) $10^{-3}$ (b) $10^5$ (c) $10^2$ 3. The resistance between + ive and - ive inputs of op - amplifier is (c) $10^6 \Omega$ (b) $1000 \Omega$ (d) None of these 4. Output resistance of an op-amp is (d) Equal to input resistance (a) High (b) Zero (c) Low MCQ # 1: (d) MCQ # 2: (b) MCQ # 3: (c) MCQ # 4: (c) MCQs Related to Article "18.8 OP-AMP AS INVERTING AMPLIFIER" 1. An op-amp will act as an inverting amplifier, when input signal is connected to: (c) Output Terminal (a) Inverting Terminal (b) Non-Inverting Terminal 2. The gain G of inverting operational amplifier is: (c) $G = \frac{R_2}{R_1}$ (d) $G = 1 - \frac{R_2}{R_1}$ (b) $G = 1 + \frac{R_2}{R_1}$ 3. The gain of inverting op-amp depends on (b) External Resistances (c) Potential Difference (a) Internal Resistance (d) Current 4. The negative sign in the expression of voltage gain for an inverting amplifier indicates that output signal is: (b) Out of phase with input signal (a) In-phase with input signal (d) None of these (c) Perpendicular to input signal MCQ # 1: (a) MCQ # 2: (a) MCQ # 3: (b) MCQ # 4: (b)

## MCQs Related to Article "18.9 OP-AMP AS NON-INVERTING AMPLIFIER"

1. The gain G of non-inverting operational amplifier is:

(a)  $G = -\frac{R_2}{R_1}$ 

(b)  $G = 1 + \frac{R_2}{R_1}$ 

(c)  $G = \frac{R_2}{R_1}$ 

(d)  $G = 1 - \frac{R_2}{R_1}$ 

2. For non-inverting amplifier, if $R_1 = \infty \Omega$ and				
<ul><li>(a) -1</li><li>(b) 0</li><li>3. An operational amplifier will act as a non-invat:</li></ul>	(c) 1 (d) $\infty$ verting amplifier when alternaing signal is applied			
(a) Inverting terminal (b) Non-Inverting terminal	• • • • • • • • • • • • • • • • • • • •			
4. The gain of non-inverting op-amp depends of				
<ul><li>(a) Internal Resistance</li><li>(b) External Resistan</li><li>The positive sign in the expression of voltage output signal is:</li></ul>				
(a) In-phase with input signal	(b) Out of phase with input signal			
(c) Perpendicular to input signal	(d) None of these			
MCQ # 1: (b) MCQ # 2: (c) MCQ	# 3: (b) MCQ # 4: (b) MCQ # 5: (a)			
MCQs Related to Article "18.10 OP-AMP AS A COM				
1. The conduction to saturation of an operation				
<ul><li>(a) Comparing two resistors (b) Comparing two vo</li><li>2. When op-amp is saturated, then</li></ul>	oltages (c) Comparing two currents			
(a) $V_o > V_{CC}$ (b) $V_o < V_{CC}$	(c) $V_o \neq V_{CC}$ (d) $V_o = V_{CC}$			
MCQ # 1: (b)	MCQ # 2: (c)			
MCQs Related to Article "18.11 COMPARATOR AS	S A NIGHT SWITCH"			
1. The automatic working of street lights is due				
(a) Inductor (b) Capacitor	(c) Comparator (d) Rectifier			
2. LDR is abbreviated for:				
(a) Light dependent resistor	(b) light depositing resistor			
<ul><li>(c) Light doped resistor</li><li>3. The use of LDR is in the circuit of:</li></ul>	(d) all of these			
(a) Night Switch (b) Logic Gates	(c) Rectifier (d) Oscillator			
4. The value of LDR depends upon:	(a) Oscillator			
(a) Intensity of sound (b) Intensity of heat	(c) Intensity of light (d) Current			
MCQ # 1: (c) MCQ # 2: (a)	MCQ # 3: (a) MCQ # 4: (c)			
MCQs Related to Article "18.12 DIGITAL SYSTEMS"				
MCQs Related to Article "18.12 DIGITAL SYSTEM	S"			
1. A system which deals with quantities or varia	S" ables which have only two discrete values or states			
A system which deals with quantities or variation is known as	ables which have only two discrete values or states			
1. A system which deals with quantities or varia				
<ol> <li>A system which deals with quantities or variaties known as</li> <li>(a) Octa system</li> <li>(b) Hexa system</li> <li>Which is not a basic logic operation:</li> <li>(a) OR operation</li> <li>(b) AND operation</li> </ol>	ables which have only two discrete values or states  (c) Digital System  (d) Decimal System  (c) NOT operation  (d) NAND operation			
<ol> <li>A system which deals with quantities or variaties known as</li> <li>(a) Octa system</li> <li>(b) Hexa system</li> <li>Which is not a basic logic operation:</li> <li>(a) OR operation</li> <li>(b) AND operation</li> <li>The electronic circuits which implement the</li> </ol>	(c) Digital System (d) Decimal System  (c) NOT operation (d) NAND operation various logic operations are known as			
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<ol> <li>A system which deals with quantities or variaties known as</li> <li>(a) Octa system</li> <li>(b) Hexa system</li> <li>Which is not a basic logic operation:</li> <li>(a) OR operation</li> <li>(b) AND operation</li> <li>The electronic circuits which implement the</li> <li>(a) Digital gates</li> <li>(b) Logic gate</li> <li>In describing functions of digital systems, light</li> </ol>	(c) Digital System (d) Decimal System  (c) NOT operation (d) NAND operation  various logic operations are known as  (c) Voltage operated gate (d) All of them  hted bulb will be described as			
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1. A system which deals with quantities or variatis known as  (a) Octa system (b) Hexa system  2. Which is not a basic logic operation:  (a) OR operation (b) AND operation  3. The electronic circuits which implement the  (a) Digital gates (b) Logic gate  4. In describing functions of digital systems, lig  (a) Infinity (b) 0  MCQ # 1: (c) MCQ # 2: (d)  MCQs Related to Article "18.13 FUNDAMENTAL I.  1. Truth table of logic function:  (a) Summarizes output values  (c) Display all input and output possibilities  2. The boolean expression X = A + B represents  (a) NAND gate (b) OR gate  3. The output of a two inputs OR gate is 0 only v  (a) Both inputs are 0 (b) Either input is 1  4. The output of AND gate is 1 when  (a) Both inputs are at 1  5. The only function of a NOT gate is to  (a) Stop a signal (b) Re-complement a  6. NOT gate has only  (a) One input (b) Two inputs  7. The term invertor is used for:  (a) NOR Gate (b) NAND Gate	(c) Digital System (d) Decimal System  (c) NOT operation (d) NAND operation  various logic operations are known as  (c) Voltage operated gate (d) All of them  hted bulb will be described as  (c) 1 (d) None of these  MCQ # 3: (b) MCQ # 4: (c)  COGIC GATES"  (b) Tabulate all input values (d) is not based on logic algebra  the logic operation of (c) NOR gate (d) NOT gate  vhen its (c) Both inputs are 1 (d) Either input is zero  (b) either one input is at 1 (d) none of these  signal (c) Invert an input signal			

## MCQs Related to Article "18.14 OTHER LOGIC GATES"

1. In NOR gate 1 + 1 = 1

(c) 1 (a) 0 (b) 2 (d) 3

2.  $X = \overline{A + B}$  is the mathematical notation for:

(a) OR gate (b) AND gate (c) NOR gate (d) NAND gate

3. NAND gate with two inputs a and b has output 0, if

(b) b is 0 (a) A is 0 (c) both a and b are 0 (d) both a and b are 1

4. NAND gate is a combination

(a) AND gate and NOT gate (b) AND gate and OR gate (d) NOT gate and NOT gate (c) OR gate and NOT gate 5. An XOR gate produces an positive logic output only when its two inputs are

(c) Different (d) Same (b) Low (a) High

6. Temperature, pressure etc are converted into electronic information by devices called

(a) LEDs (b) Sensors (c) Vacuum tubes (d) None

MCO # 1: (a)	MCO # 2: (c)	MCO # 3: (d)	MCO # 4: (a)	MCO # 5: (c)	MCO # 6: (b)

