PHYSICS

AAKASH INSTITUTE ENGLISH

Mock Test 40: PHYSICS

Example

1. The symbol of p-n-p transistor is

A. 

B. 

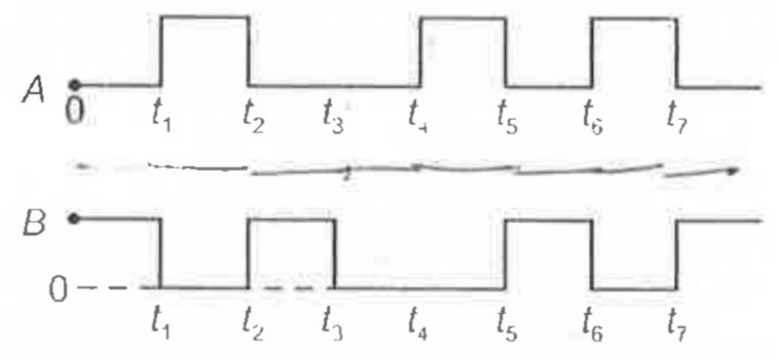
C. 

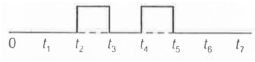
D. 

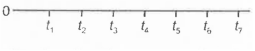
Answer: C

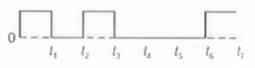
Watch Video Solution

2. The output waveform of AND gate for the following input waveforms is



A. 

B. 

C. 

D. 

Answer: B

Watch Video Solution

3. The following truth table corresponds to

A	B	Y
0	0	1
1	0	1
0	1	1
1	1	0

A. AND Gate

B. OR Gate

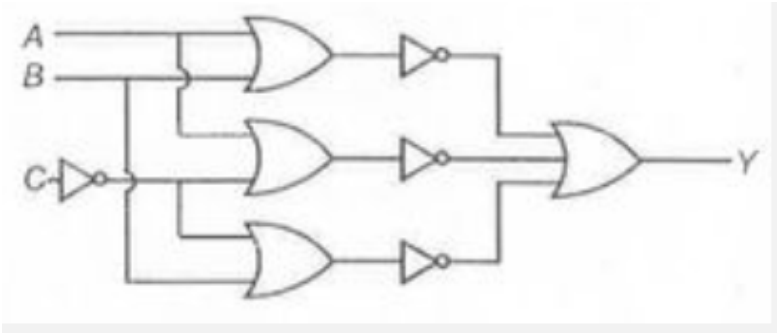
C. NOR Gate

D. NAND Gate

Answer: D

Watch Video Solution

4. The output Y for logic diagram shown below is



A. $Y = \overline{A} + \overline{B} + \overline{C}$

B. $Y = \overline{\overline{A}.B} + \overline{A}.C + \overline{B}.C$

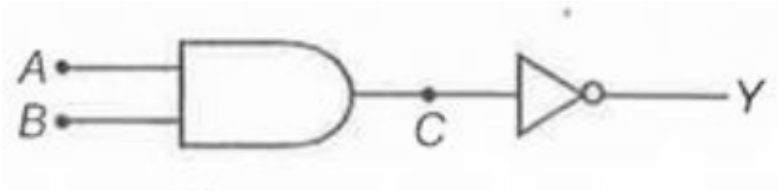
C. $Y = \left(\overline{\overline{A+B}}\right) + \left(\overline{\overline{B+C}}\right) + \left(\overline{\overline{C+A}}\right)$

D. $Y = \overline{A}B + \overline{B}.C + \overline{C}A$

Answer: B

Watch Video Solution

5. The output of the following logic circuit is



A. $Y = A + \overline{B}$

B. $Y = \overline{\overline{A}.\,B}$

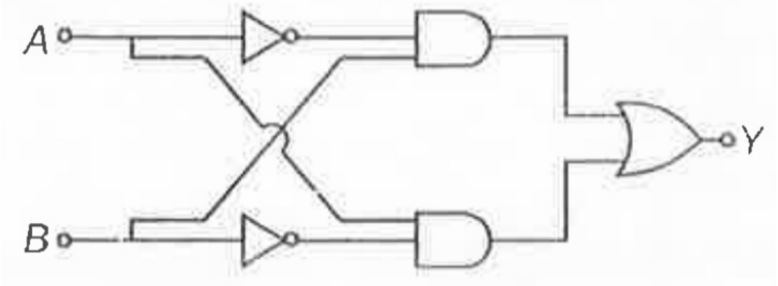
C. $Y = \overline{A} + B$

D. $Y = \overline{A}.\,\overline{B}$

Answer: B

Watch Video Solution

6. The logic circuit (figure) represents which logic gate?



A. NAND gate

B. AND gate

C. XOR gate

D. NOR gate

Answer: C

Watch Video Solution

7. In a common emitter amplifier, the input and output voltage are out of phase by

A. 30^{o}

B. 90^{o}

C. 120^{o}

D. 180^{o}

Answer: D

 Watch Video Solution

8. A CE amplifier has voltage gain of 50, an input impedance of 2000 ohm and an output impedance of 400 ohm. The power gain of the amplifier will be

A. 22500

B. 12500

C. 32500

D. 4100

Answer: B

Watch Video Solution

Watch Video Solution

9. The number of terminals in $n-p-n$ transistor is

A. 2

B. 3

C. 4

D. 5

Answer: B

Watch Video Solution

10. An AND gate can be prepared by repetitive use of

A. NOT gate

B. XOR gate

C. OR gate

D. NAND gate

Answer: D

Watch Video Solution

11. For a transistor, in a common emitter arragement, the alternating current gain β is given by

A. $\left.\frac{\Delta I_C}{\Delta I_B}\right]_{V_{CE}}$

B. $\left.\frac{\Delta I_B}{\Delta I_E}\right]_{V_{BE}}$

C. $\left.\frac{\Delta I_B}{\Delta I_C}\right]_{V_{CE}}$

D. $\left.\frac{\Delta I_C}{\Delta I_E}\right]_{V_{CE}}$

Answer: A

Watch Video Solution

12. Transistors can work as a switch in

A. Saturation region

B. Active region

C. Cut off region

D. Both (1) and (3)

Answer: D

 Watch Video Solution

13. Transconductance in CE amplifier circuit is defined as

A. Ratio of change in collector current to the change in emitter current

B. Ratio of change in input base-emitter voltage to the change in emitter current

C. Ratio of change in collector current to the change in input base-emitter voltage

D. Ratio of change in emitter current to the change in input base-emitter voltage

Answer: C

Watch Video Solution

14. Power Gain of CE amplifier circuit is given by

A. Voltage gain × current gain

B. Voltage gain/Current gain

C. Current gain/Voltage gain

D. (Voltage gain)^2 × current gain

Answer: A

Watch Video Solution

15. The following gate is equivalent to

A. OR gate

B. AND gate

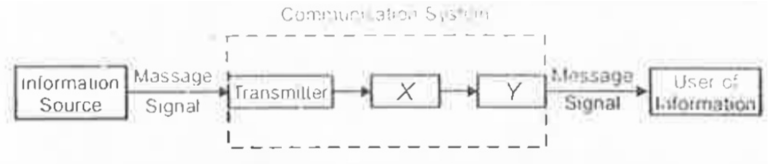
C. NOT gate

D. XOR gate

Answer: C

Watch Video Solution

16. The element X and Y in the communication system (figure) are respectively



A. Noise, channel

B. Receiver, channel

C. Receiver, noise

D. Channel, receiver

Answer: D

Watch Video Solution

17. The length of half wave dipole antenna at 50 MHz is

A. 5 m

B. 4 m

C. 3 m

D. 2 m

Answer: C

Watch Video Solution

18. The process of increasing the strength of a signal using an electronic circuit is called.

A. Attenuation

B. Amplification

C. Modulation

D. Demodulation

Answer: B

Watch Video Solution

19. A device that converts one from of energy into another form is termed as

A. Transducer

B. Channel

C. Repeater

D. All of these

Answer: A

Watch Video Solution

20. The power radiated by linear antenna of length 'l' is proportional to (λ=wavelength)

A. $P \propto \left(\frac{l}{\lambda}\right)$

B. $P \propto \left(\frac{\lambda}{l}\right)^2$

C. $P \propto \left(\frac{l}{\lambda}\right)^2$

D. $P \propto \left(\frac{\lambda}{l}\right)$

Answer: C

Watch Video Solution

21. One of the components of frequency of amplitude modulated wave (AM) formed by the superposition of message signal of

frequency ω_1 on a carrier wave of frequency ω_2 is

A. ω_1

B. $\frac{\omega_1}{2}$

C. ω_2

D. $\frac{\omega_1 + \omega_2}{2}$

Answer: C

Watch Video Solution

22. Amplitude modulation index μ determines

A. The quality of received signal

B. The quality of transmitted signal

C. The quality of carrier wave

D. Both (1) and (3)

Answer: B

Watch Video Solution

23. If A_m and $A_c$are the amplitudes of modulating signal and carrier wave respectively, then modulation index is given by

A. $\mu = \frac{A_m}{A_c}$

B. $\mu = \frac{A_c}{A_m}$

C. $\mu = \frac{A_c^2}{A_m}$

D. $\mu = \frac{A_m^2}{A_c}$

Answer: A

Watch Video Solution

24. The maximum line-of -sight distance d_M between two antennas having heights h_T and H_R above the earth is

A. $d_m = \sqrt{2Rh_T} - \sqrt{2Rh_R}$

B. $d_m = \left(\sqrt{2Rh_T} - \sqrt{2Rh_R}\right)^2$

C. $d_m = \sqrt{2Rh_T} + \sqrt{2Rh_R}$

D. $d_m = \left(\sqrt{2Rh_T} + \sqrt{2Rh_R}\right)^2$

Answer: C

Watch Video Solution

25. The amplitude modulated signal consists of two sinusoidal waves of frequencies, ($\omega_c \rightarrow$ angular frequency of carrier wave) ($\omega_m \rightarrow$ angular frequency of modulating signal)

A. $\frac{\omega_c}{2}, \frac{\omega_m}{2}$

B. $\frac{\omega_c + \omega_m}{2}, \frac{\omega_c - \omega_m}{2}$

C. $\frac{\omega_c}{\omega_m}, \frac{\omega_c^2}{\omega_m^2}$

D. $\omega_c + \omega_m, \omega_c - \omega_m$

Answer: D

Watch Video Solution

26. An AM transmitter radiates 70 kW of carrier power. The radiated power at 75% modulation would be

A. 89.69 kW

B. 79.20 kW

C. 85.59 kW

D. 83.69 kW

Answer: A

Watch Video Solution

27. If ω_c and ω_m are angular frequencies of carrier wave and modulating signal respectively, then Band width of amplitude modulated waves is equal to

A. $\frac{\omega_c + \omega_m}{2}$

B. $2\omega_m$

C. $2\omega_c$

D. $\frac{\omega_c - \omega_m}{2}$

Answer: B

Watch Video Solution

28. Communication through free space using radio waves takes place over frequency range of

A. Few tens of MHz to a few GHz

B. Few tens of KHz to a few hundreds of KHz

C. Few tens of GHz to a few hundreds of GHz

D. Few hundreds of GHz to few thousands of GHz

Answer: A

Watch Video Solution

29. During the process of modulation, if phase of the carrier wave is varied in accordance with

information/message signals then it would result in

A. Amplitude modulation

B. Frequency modulation

C. Phase modulation

D. All of these

Answer: C

 Watch Video Solution