

## ELECTRONICS AND COMMUNICATIONS

1. In a communication system, noise is most likely to get into the system

- (A) at the transmitter
- (B) in the channel
- (C) in the information source
- (D) at the destination

2. When modulation frequency is doubled, the modulation index is halved, and the modulating voltage remains constant, the modulation system is

- (A) amplitude modulation
- (B) phase modulation
- (C) frequency modulation
- (D) angle modulation

3. Impedance inversion may be obtained with

- (A) a short – circuited stub
- (B) an open – circuited stub
- (C) a quarter – wave line
- (D) a half – wave line

4. HIGH frequency waves are

- (A) observed by the F2 layer
- (B) reflected by D layer
- (C) capable of use for long-distance communication on the moon
- (D) affected by the solar cycle

5. Which one of the following terms does not apply to the Yagi-uda array

- (A) Good band width
- (B) Parasitic elements
- (C) Folded dipole
- (D) High gain

6. A duplexer is used

- (A) to couple two different antennae to a transmitter without mutual interference
- (B) to allow one antenna to be used for reception or transmission without mutual interference
- (C) to prevent interference between two antennae when they are connected to receiver
- (D) to increase the speed of the pulses in pulsed radar

7. Indicate which of the following system is digital

- (A) Pulse – Position modulation
- (B) Pulse – Code modulation
- (C) Pulse – Width modulation
- (D) Pulse – Frequency modulation

8. A forward error correcting code corrects errors only

- (A) requiring partial retransmission of the signal
- (B) requiring retransmission of entire signal
- (C) using parity to correct to errors in all cases
- (D) requiring no part of the signal to be transmitted

9. A typical signal strength received from a geosynchronous communication satellite is of the order of

- (A) a few milli watts
- (B) kilo watts (C) watts
- (D) few pico watts

10. Telephone traffic is measured

- (A) with echo cancellers
- (B) by the relative congestion
- (C) in terms of the grade of service
- (D) in erlangs

11. Positive logic in a logic circuit is one in which

- (A) logic 0 and 1 are represented by 0 and positive voltage respectively
- (B) logic 0 and 1 are represented by negative and positive voltages respectively

- (C) logic 0 voltage level is higher than logic 1 voltage level
- (D) logic 0 voltage level is lower than logic 1 voltage level

12. A half-adder can be made from

- (A) two NAND gates
- (B) a NOT gate and an OR gate
- (C) an AND gate and an OR gate
- (D) an AND gate and an X-OR gate

13. Which of the following devices has its characteristics very close to that of an ideal current source.

- (A) Field effect transistor
- (B) Transistor in common base mode
- (C) Zener diode
- (D) MOSFET

14. The main use of a common base transistor amplifier is

- (A) as voltage amplifier
- (B) current amplifier
- (C) for matching a high source impedance to a low load impedance
- (D) for rectification of a.c. signal

15. A class-B amplifier is biased

- (A) Just at cut-off
- (B) nearly twice cut-off
- (C) at mid point of load line
- (D) so that IB equals jct IC

16. If the peak transmitted power in a radar system is increased by a factor of 16, the maximum range will be increased by a factor of

- (A) 2 (B) 4 (C) 8 (D) 16

17. A high PRF will (indicate the false statement)

- (A) make the returned echoes easier to distinguish from noise
- (B) make target tracking easier with conical scanning
- (C) increase the maximum range
- (D) have no effect of the range resolution

18. A solution to the "blind speed" problem in a radar system is to

- (A) change the Doppler frequency
- (B) vary the PRF
- (C) use mono pulse
- (D) use MTI

19. The number of active picture elements in a television image depends on

- (A) fly back time
- (B) CRT screen size
- (C) received band width
- (D) FB ratio of receiver antenna

20. In a colour TV, the three primary colours are

- (A) red, orange and blue
- (B) red, blue and green
- (C) red, green and yellow
- (D) red, orange and green