

Department of Electronics

Shivaji University, Kolhapur

Seat No.

Summer Final Examinations-M.Sc. Part II, Sem-IV (2019-20)

Sample – ELECTRONICS

Day and Date: Tuesday, October, 2020

Max Marks : 50

**Instructions:**

1. Attempt any 25.
2. Each question carries equal 2 marks.

1. Transmitter, information channel and receiver are the basic blocks of
  - a) Transmission system
  - b) Modulation system
  - c) Receiver system
  - d) Communication system**
2. Spectral width is one of the important factors for .....
  - a) Material dispersion**
  - b) Polarization
  - c) Attenuation
  - d) Absorption
3. Raman scattering arises due to interaction between .....
  - a) Light and vibration of silica molecules in the fiber**
  - b) Light and absorption of silica molecules in the fiber
  - c) Light and rotation of silica molecules in the fiber
  - d) Waves and vibration of silica molecules in the fiber
4. In 1880 Alexander Graham Bell invented a light communication system, the photo phone.  
He used .....
  - a) Sunlight reflected from a thin voice modulated mirror to carry conversation**
  - b) Sunlight transmitted from a thin voice modulated mirror to carry conversation
  - c) Sunlight reflected from a thin voice demodulated mirror to carry conversation
  - d) Sunlight transmitted from a thin voice demodulated mirror to carry conversation
5. Population inversion means to disturb the state of thermal equilibrium of closed system by an external energy supply to achieve an electron ratio.....
  - a)  $N_2/N_1 > 1$**
  - b)  $N_2/N_1 < 1$
  - c)  $N_2/N_1 = 1$
  - d)  $N_1/N_2 = 1$

6. Numerical aperture is depending on .....

- a) Radius of core
- b) Refractive index**
- c) Radius of cladding
- d) Cut-off wavelength

7.  $x(n)$  is discrete if  $n$  is \_\_\_\_\_

- a) Discrete**
- b) Continuous
- c) Both discrete & continuous
- d) None of the above

8. If  $x(-n) = x(n)$  then  $x(n)$  is called as \_\_\_\_\_ signal

- a) Symmetric**
- b) Asymmetric
- c) Both symmetric & asymmetric
- d) None

9. The process of conversion of continuous time signal into discrete time signal \_\_\_\_\_.

- a) sampling**
- b) aliasing
- c) amplification
- d) attenuation

10. Mechanical misalignment between two fibers is.....

- a) Longitudinal & transversal
- b) Lateral and bilateral
- c) Angular and non angular
- d) Longitudinal, lateral and angular**

11. Extrinsic losses occur due to .....

- a) Alignments
- b) Misalignments**
- c) Disalignments
- d) None of these

12. In full duplex .....

- a) Signals can propagate simultaneously in both directions along a single fiber**
- b) Signals cannot propagate simultaneously in both directions along a single fiber
- c) Signals can propagate simultaneously in one direction along a multi fiber
- d) Signals cannot propagate simultaneously in one direction along a multi fiber

13. For lossless line .....

- (A)  $R = \infty$
- (B)  $G = \infty$
- (C)  $R = G = \infty$
- (D)  $R = G = 0$**

14. A flat line, which has no reflected wave, has ..... and a standing-wave ratio of unity.

- (A)  $|E_{max}| = 2|E_{min}|$
- (B)  $|E_{max}| = 10|E_{min}|$
- (C)  $|E_{max}| = |E_{min}|$**
- (D)  $|E_{max}| = 100|E_{min}|$

15. A transmission line terminated in .....impedance is called a properly terminated line.

- (A) short-circuit
- (B) its characteristic**
- (C) open-circuit
- (D) highest possible

16. A magic tee is .....

- (A) a combination of E-plane tee and H-plane tee
- (B) never used for duplexing
- (C) used for mixing
- (D) both (A) and (C)**

17. For the rectangular cavity resonator having  $a > b < d$  the dominant mode is the ..... mode.

- A)  $TE_{101}$**
- B)  $TM_{111}$
- C)  $TM_{110}$
- D)  $TE_{111}$

18. The Mealy FSM changes its output when its \_\_\_\_\_ changes.

- A. input and current state**
- B. input
- C. current state
- D. neither input nor current state

19. An FSM travels through 32 different states ( $S_0$  to  $S_{31}$ ), then \_\_\_\_\_ flip-flops are required to design its memory logic.

- A. 2
- B. 3
- C. 4
- D. 5**

20. A 5 variable K-map filled with 0s in all of its cells; the simplified logic circuit will be \_\_\_\_\_.
- A. Output connected to Ground**
  - B. Output connected to Vcc
  - C. Output connected to its input
  - D. Output kept floating.
21. The equivalent circuit of two inverters connected in series would be \_\_\_\_\_.
- A. conducting wire**
  - B. NOT gate
  - C. ground
  - D. Vcc
22. To implement AND gate logic using 2:1 MUX \_\_\_\_\_.
- A. its select line must be grounded
  - B. its select line must be Vcc**
  - C. both A, B
  - D. none of the above
23. CISC architecture is characterized by \_\_\_\_\_ (which one is wrong?)
- a) Simple hardware**
  - b) Simple compiler construction
  - c) Simple ALP
  - d) None of these
24. \_\_\_\_\_ architecture uses Microcode control.
- a) CISC**
  - b) RISC
  - c) MISC
  - d) ZISC
25. Von Neumann architecture has been characterized by \_\_\_\_\_.
- a) Single storage structure
  - b) Sequential architecture
  - c) Easy ISP
  - d) All of these**
26. Architecture gives improvement on both instruction count and Clocks per Instruction.
- a) Pipelined
  - b) Superscalar
  - c) SIMD
  - 4) VLIW**

27. When two instructions use same hardware in same cycle, it is considered as \_\_\_\_ pipeline hazard.

- a) **structural**
- b) instruction
- c) data
- d) control

28. X) Attenuation in optical fiber is depending on .....

- a) Radius of core
- b) **i/o put power**
- c) Radius of cladding
- d) Cut-off wavelength

29. First generation analog cellular system was started in .....

- a) 2010
- b) 1818
- c) 1880
- d) **1980**

30. ....connects calls between mobile units.

- a) BSC
  - b) MSC
  - c) **MTSO**
  - d) Cell site
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