

TERNA ENGINEERING COLLEGE
Nerul, Navi Mumbai-400 706.
Electronics & Telecommunication

(M.E. SAMPLE ENTRANCE TEST PAPER)

Name of the Student:

Date:

- INSTRUCTIONS :**
- 1. Students are requested to write their name on the test paper and put their signature at the last sheet of the paper.**
 - 2. Use of calculator is allowed**
 - 3. Pl. put a Tick mark on your answer**
 - 4. All the questions are Compulsory**
 - 5. All the questions carry equal marks**
 - 6. Max. marks : 50**
 - 7. Max. Time : One Hour.**
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- Q.1 A transistor will operate in inverted region when
- a) Emitter junction is forward biased and collector junction is reverse biased.
 - b) Emitter junction is reverse biased and collector junction is forward biased.
 - c) Emitter junction as well as collector junction are forward biased.
 - d) Emitter junction as well as collector junction are reverse biased.
- Q.2 Which of the following is the fastest switching device?
- a) JFET
 - b) BJT
 - c) MOSFET
 - d) Triode
- Q.3 In case of amplifiers which coupling gives the highest gain?
- a) Transformer coupling
 - b) Resistance coupling
 - c) Impedance coupling
 - d) Capacitance coupling
- Q.4 The atomic weight of an atom is determined by
- a) The number of protons
 - b) The number of neutrons
 - c) The number of protons & neutrons
 - d) The number of electrons & protons

- Q.5 An ideal current amplifier should have
- $R_i = 0, R_o = 0$
 - $R_i = 0, R_o = \infty$
 - $R_i = \infty, R_o = 0$
 - $R_i = \infty, R_o = \infty$
- Q.6 Which of the following material is used for infrared LED's?
- Gallium arsenide
 - Calcium phosphide
 - Silicon
 - None of the above
- Q.7 In a practical oscillator $A\beta$ is
- slightly less than 1.
 - 1
 - 1
 - slightly greater than 1.
- Q.8 Which of the following frequency is likely to be associated with AM radio broadcast.
- 1000 KHz
 - 100 MHz
 - 500 MHz
 - 10 GHz
- Q.9 Pulse modulation is used in
- Radio navigation
 - Automatic landing equipment
 - Data communication
 - All of the above
- Q.10 For a good dielectric the intrinsic impedance is given by
- $\sqrt{C/L}$
 - $\sqrt{L/C}$
 - $\sqrt{\frac{R + j\omega c}{R + j\omega L}}$
 - $\sqrt{\frac{R + j\omega L}{R + j\omega c}}$

- Q.11 Which of the following system is digital?
- a) PPM
 - b) PCM
 - c) PFM
 - d) PWM
- Q.12 The purpose of pilot carrier in SSB is
- a) To provide increased bandwidth
 - b) To reduce power consumption
 - c) Improved noise immunity
 - d) Frequency stabilization
- Q.13 The antenna loading capacitor C_s is adjusted for
- a) Minimum output.
 - b) Desired output.
 - c) Minimum RF antenna current
 - d) None of the above.
- Q.14 SHF could be used for
- a) Radio location equipment
 - b) Mar time radio communication
 - c) FM radio broadcasts
 - d) Satellite communications
- Q.15 In which of the following frequency bands are the standard AM radio broadcast stations ?
- a) MF
 - b) HF
 - c) VHF
 - d) UHF
- Q.16 In a radio receiver AGC voltage is proportional to
- a) The amplitude of IF carrier
 - b) IF
 - c) The amplitude of audio signal
 - d) All of the above
- Q.17 The TV broadcasting in India is done in
- a) VHF Band I

- b) VHF Band I & II
- c) VHF Band I, II & III
- d) VHF Band I & III
- Q.18 In TV system
- a) Picture is AM, sound is FM
- b) Picture is FM, sound is AM
- c) Picture & sound both are AM
- d) Picture & sound both are FM
- Q.19 In TV to eliminate ghosts in the picture
- a) A booster should be connected to
- b) Longer transmission line should be connected
- c) Antenna orientation should be changed
- d) None of the above
- Q.20 Line of sight transmission is a characteristic of propagation for
- a) MF Band
- b) HF Band
- c) VHF & UHF Bands
- d) All of the above.
- Q.21 The relation for electric field intensity in a medium
- a) $E = Q / 4 \Pi r$
- b) $E = Q / 4 \Pi r^2$
- c) $E = Q / 4 \Pi \epsilon r$
- d) $E = Q / 4 \Pi \epsilon r^2$
- Q.22 The velocity of electromagnetic waves in a dielectric medium ($\epsilon_r = 4$) is
- a) 3×10^8 meters / sec.
- b) 1.5×10^8 meters / sec.
- c) 6×10^8 meters / sec.
- d) 12×10^8 meters / sec.
- Q.23 The laplace transform of damped sine wave $e^{-at} \cdot \sin \omega t$. is
- a) $\omega / S^2 + \omega^2$
- b) $S / S^2 + \omega^2$
- c) $\omega / (S+a)^2 + \omega^2$

d) $S / (S+a)^2 + \omega^2$

- Q.24 The transfer function of a system is used to calculate
- a) Output for a given input
 - b) Input for a given output
 - c) Order of the system
 - d) Time constant
- Q.25 Which of the following statement is incorrect, the Doppler effect is used in
- a) MTI system
 - b) CW Radar
 - c) FM Radar
 - d) Moving target plotting on the PPI
- Q.26 Radiation intensity dose not depend upon
- a) The antenna direction
 - b) Distance from the radiator
 - c) Both (a) and (b) above
 - d) None of the above
- Q.27 A log periodic antenna is a
- a) Frequency independent antenna
 - b) Frequency dependent antenna
 - c) Directional antenna
 - d) None of the above.
- Q.28 The polarization of electromagnetic wave is in
- a) The direction of electric field
 - b) The direction of magnetic field
 - c) The direction of electric & magnetic field
 - d) None of the above.
- Q.29 Which antenna is a wideband antenna?
- a) Hertz antenna
 - b) Marconi antenna
 - c) Folded dipole
 - d) None of the above.
- Q. 30 The TWT is sometimes preferred to the multicavity klystron amplifier because the former

- a) Is more efficient
- b) Has a greater bandwidth
- c) Has a higher number of modes
- d) Produces a higher output power

Q.31 The dominant mode for rectangular waveguide is

- a) TEM
- b) TE₁₀
- c) TE₁₁
- d) TM₁₁

Q.32 Which of the following microwave diode is not a junction based device ?

- a) GUNN
- a) PIN
- b) ZENER
- c) TUNNEL

Q.33 Which of the following interrupts is unmask able interrupt

- a) RST 5.5
- b) RST 7.5
- c) TRAP
- d) INTR

Q.34 A magnetron is a

- a) High power amplifier
- b) High power oscillator
- c) Self excited oscillator
- d) None of the above

Q.35 A pin diode is

- a) A microwave mixer diode
- b) Preferred as a microwave switch
- c) A metal semi conductor
- d) A microwave detector

Q.36 In telephones the dial tone has a frequency of

- a) 1 Hz
- b) 13 Hz
- c) 33 Hz

d) 133 Hz

Q.37 Microphone used in an ordinary telephone is

- a) Carbon microphone
- b) Crystal microphone
- c) Piezo electric microphone
- d) Pressure microphone

Q.38 A passive satellite

- a) Only reflects back signals
- b) Only generates signals
- c) Only absorbs signals
- d) Receives, modulates & then reflects signals

Q.39 A geostationary satellite and earth have same

- a) Acceleration
- b) Momentum
- c) Velocity
- d) Angular velocity

Q.40 The binary number 0.10110111101 is equal to hexadecimal number

- a) B6A
- b) B7A
- c) A6B
- d) A7B

Q.41 Three Boolean operators are

- a) OR, NOT, AND
- b) OR, NOR, NAND
- c) NOT, NOR, NAND
- d) None of the above

Q.42 How many flip flop circuits are needed to divide by 16 ?

- a) Two
- b) Four
- c) Eight
- d) Sixteen

Q.43 Memory used for storing variable quantities is

- a) ROM

- b) RAM
- c) PROM
- d) EPROM

Q.44 When both P and N channel occur in MOS technology the chip is

- a) PMOS
- b) NMOS
- c) CMOS
- d) None of the above.

Q. 45 Which of the following is most widely used bipolar family

- a) DTL
- b) TTL
- c) ECL
- d) All of the above.

Q.46 EPROM is erased by

- a) Red light
- b) Sodium light
- c) Ultraviolet rays
- d) Infrared rays

Q. 47 Which of the following is not a source of power

- a) Solar Cell
- b) Photovoltaic Cell
- c) Photoelectric Cell
- d) Thermocouple

Q.48 Ferromagnetic material exhibits

- a) A linear B-H behavior
- b) A non linear B-H behavior
- c) An exponential B-H behavior
- d) None of the above.

Q.49 Which of the following place is not associated with nuclear power ?

- a) Kota
- b) Tarapur
- c) Narora
- d) Dhanbad

Q.50 Power factor is highest in case of

- a) Mercury arc lamp
- b) Sodium vapour lamps
- c) Tube lights
- d) GLS lamps

Signature of Student
