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M.Sc. SEM- III (NEW COURSE)
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PHYSICS
MSPHY 304 CC (Electronics-3)

કુલ સમય :– ૬૦ મીનીટ **કુલ પ્રશ્નો : ૫૦** **વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫**

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1.In ----- modulation , the carrier wave of pulse is varies on time axis.
(a) PAM (b) PWM (c) PTM (d) None of these
2.Pulse code modulation is a type of ------ modulation
(a) analog (b) angle (c) digital (d) None of these
3. Regenerative repeaters are used for -----
(a) Eliminating noise (b) reconstruction of signals (c) transmission over long distances (d) All of these
4.In which modulation technique minimum bandwidth is required in digital transmission.
(a) Delta modulation (b) PCM (c) DPCM (d) None of these
5. The sequence of operations in PCM is ----
(a) Quantizing , sampling , encoding (b) Sampling , quantizing, encoding
(c) Quantizing , encoding, sampling (d) None of these
6. The last step of PCM is-----
(a)Sampling (b) encoding (c) Quantization (d) None of these
7.Advantages of digital communication are —
(a) easy multiplexing (b) easy process sing (c) reliable (d) All of the mentioned
8.In which modulation technique minimum bandwidth is required in digital transmission.
(a) Delta modulation (b) PCM (c) DPCM (d) None of these
9.OOK is a type of ---- modulation
(a) ASK (b) FSK (c) PSK (d) None of these
10.------ is mostly preferred for telegraphy.
(a) single tone modulation (b) OOK (c) FSK (d) PCM
11.-------- synchronization is required to keep track of individual channels in time division multiplexed system.
(a) Carrier (b)Frame (c) Network (d) Symbol
12.ASK modulated signal has the bandwidth ------
(a) same as bandwidth of baseband signal (b) half the bandwidth of baseband signal
(c) double the bandwidth of baseband signal (d) none
13.The transfer function of the matched filter is --------- to the noise spectral density.
(a) directly proportional (b) inversely proportional (c) equal (d) None of these
14. -------- detectors are suited for large signals.
(a) Linear (b) Square law (c) Both a and b (d) None of these
15.Which detectors are most commonly used in all types of home radio receiver because of their large detection efficiency?
(a) Balanced slope (b) Balanced slope (c) Envelope diode (d) None of these
16.For efficient operation of diode detector input signal must be large and load resistance must be kept ---- the diode resistance.
(a) less than (b) greater than (c) equal to (d) None of these
17. Which frequency demodulator requires an input limiter?
(a) Pulse averaging discriminator (b) PLL (c) Quadrature detector (d) Foster Seeley
18.Which of following depends on the frequency –phase relationship of a tuned circuit?
(a) Ratio detector (b) Quadrature detector (c) PLL detector (d)n none
19.A variation of foster Seeley discriminator widely used in older TV receiver designs is----
(a) ratio detector (b) PLL (c) Quadrature detector (d) none
20.Which of following is consists of phase comparator and VCO?
(a) Ratio detector (b) Quadrature detector (c) PLL (d) None of these
21.In a ratio detector ----
(a) the linearity is worse than in phase discriminator
(b) the linearity is better than in phase discriminator
(c) Stabilization against signal strength variation is provided (d) None of these
22. Which of following is a device having combination of multiplier and low pass filter?
(a) Phase comparator (b) VCO (c) both (d) None of these
23. VCO stands for ------ .
(a) Variable capacitor Oscillator (b) Voltage controlled Oscillator (c) Voltage controlled operator (d) None
24.Which of following tuned-circuit discriminator is relatively immune to amplitude variations in its input signal?
(a) Ratio detector (b) Slope detector (c) Balanced slope detector (d) Quadrature detector

25.------ techniques are AM demodulation.
(a) Square law demodulator (b) Envelope detector (c) PLL detector (d) Both a and b
26._______ measurement reference data is changes with time.
(a) Time critical (b) Time stable (c) open time (d) None of These
27.Which relation is true for electromagnetic radiation from object?
(a) v =hc/f (b) E= λ / hc (c) E= hc/λ (d) None of these
28.Which energy radiation is dangerous for human health?
(a) very long wavelength (b) very short wavelength (c) visual wave length (d) None of these
29.What is the value of emissivity for a perfect black body?
(a) infinite (b) Zero (c) one (d) None of these
30.Write equation of the STEFAN - BOLTZMANN LAW for radiation
(a) λ_{max}=2897.8/T (b) $W = \sigma T^4$ (c) E= hc/λ (d) None of these
31.Give the example of effective atmospheric particles for Rayleigh scattering
(a) gas molecule (b) fumes and dust (c) water drop (d) None of these
32.What is unit of IRRADIANCE ?
(a) Ampear per meter (b) watts per meter (C) watts per square meter (d) None of these
33. The refractive index of ocean water ------ with salinity.
(a) increases (b) decreases (c) neither increases or decreases (d) None of these
34.Which one of the following helps to identify the objects on the earth surface?
(a) Signature (b) Radiometric error (c) Atmospheric window (d) None of these
35.Which one of the following errors is produced by platform characteristics of the sensor?
(a) Altitude (b) Orbit drift (c) Altitude variation (d) All of these
36.Remote sensing techniques make use of the properties of ----
(a) sound waves (b) Electric waves (c) Electro-magnetic waves (d) All of these
37.Which of the following statements is incorrect?
(a) GIS technology contains analytic capabilities for overlaying maps
(b) GIS technology is the same as traditional mapping
(c) GIS technology is capable to study the environmental surroundings
d) None of these
38.GIS deals with which kind of data?
(a) Numeric data (b) Binary data (c) Spatial data (d) Complex data
39.The power factor is defined as ----
(a) True power /Apparent power (b) Apparent power / True power (c) True power x Apparent power (d) None of these
40.The power factor of a D.C. circuit is always -----
(a) More than unity (b) Less than unity (c) Unity (d) Zero
41.What will happen, with the increase in speed of a DC motor?
(a) Back emf increase but line current falls (b) Back emf falls and line current increase.
(c) Both back emf as well as line current increase (d) None of these
42.In DC motor, which of the following part can sustain the maximum temperature rise?
(a) Field winding (b) Commutator (c) Slip rings (d) Armature winding
43.Which of the following quantity will decrease if supply voltage is increased?
(a) Starting torque (b) Operating speed (c) Full-load current (d) Cannot be determined
44.Armature resistance control method is used for the speed ____ .
(a) Above rated speed (b) Below rated speed (c) Can be used anywhere (d) Can’t tell
45.How many thyristors do we need in half wave converter?
(a) 1 (b) 2 (c) 3 (d) Many
46.How many quadrants does full-converter work?
(a) One (b) Half (c) Two (d) Can be any
47.Full-converter can be used in DC motor for regenerative braking in ____ operation.
(a) Constant (b) Variable (c) Inversion (d) Opposite
48.Three phase converters are employed for _______
(a) Large kW motors (b) Small kW motors (c) In all motors (d) None of these
49. Which of the following method is employed when regenerative braking is necessary?
(a) DC chopper (b) Variable resistor (c) Inverter rectifier (d) Motor-generator
50.Which of the following is not the method of auxiliary commutation?
(a) Voltage commutation (b) Resistance commutation (c) Current commutation (d) Load commutation