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ELECTRICAL TEST PAPER

[15-04-2017]

1. The Wave $A \cos(\omega_1 t + k \cos \omega_2 t)$ is
 - a) amplitude modulated
 - b) frequency modulated
 - c) phase modulated
 - d) frequency as well as phase modulated
2. A satellite channel can be fairly accurately modelled as a
 - a) random delay channel
 - b) panic button channel
 - c) additive white Gaussian noise channel
 - d) fading channel
3. Which of the following is not a component of PLL?
 - a) Frequency multiplier
 - b) Phase detector
 - c) VCO
 - d) Loop filter
4. AM receiver is normally biased in
 - a) Class-A
 - b) Class-B
 - c) Class-C
 - d) Class B-C condition
5. Which signalling scheme is most affected by noise?
 - a) ASK
 - b) FSK
 - c) PSK
 - d) QAM
6. What are the three steps in generating PCM in the correct sequence?
 - a) Sampling, quantizing and encoding
 - b) Encoding, sampling and quantizing
 - c) Sampling, encoding and quantizing
 - d) Quantizing, sampling and encoding
7. What is the main objective of trellis coding?
 - a) To narrow the bandwidth
 - b) To simplify modulation
 - c) To increase the data rate
 - d) To reduce the error rate
8. Which one of the following is not a part of typical TV receiver?
 - a) Sweep signal generator
 - b) Envelope detector
 - c) Video amplifier
 - d) Pre-emphasis circuit
9. Which one of the following modulation technique is most affected by noise?
 - a) ASK
 - b) PSK
 - c) FSK
 - d) MSK
10. For a non-uniform quantizer more quantizing steps are used for signals of
 - a) Low frequency
 - b) High amplitude
 - c) Low amplitude
 - d) High frequency
11. Which one of the following pulse communications systems is digital?
 - a) PAM
 - b) PCM
 - c) PPM
 - d) PWM
12. Which one of the following modulation techniques has got maximum SNR?
 - a) AM-SSB
 - b) AM-JSB
 - c) FM
 - d) AM-SC
13. If the probability of a message $1/4$, then the information in bits is
 - a) 1 bit
 - b) 2 bit
 - c) 4 bit
 - d) 8 bit
14. The most noise immune system is
 - a) SSB
 - b) PCM
 - c) PDM
 - d) PWM
15. For elimination of 5th harmonics from the output of an inverter, what will be the position of pulse in a PWM inverter?
 - a) 72°
 - b) 36°
 - c) 60°
 - d) 90°
16. What is the effect of blanking time on output voltage in PWM inverter?
 - a) Distortion in instantaneous voltage at current zero crossing
 - b) Low order space harmonics in output voltage
 - c) Distribution in instantaneous voltage at voltage zero crossing
 - d) High order time harmonics in output voltage
17. Static VAR controllers are used to provide dynamic voltage regulation. These controllers are primarily of
 - a) Thyristor switched inductors
 - b) Thyristor controlled capacitors
 - c) Thyristor switched resistor

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- d) Thyristor switched inductors and Thyristor controlled capacitors
18. A single-phase current source inverter is connected with capacitive load only the waveform of the output voltage across the capacitor for constant source current will be
- Sine wave
 - Square wave
 - Triangular wave
 - Step function
19. A modern power semiconductor device that combines the characteristics of BJT and MOSFET is
- GTO
 - FCT
 - IGBT
 - MCT
20. A cycloconverters-fed induction motor drive is most suitable for which one of the following?
- Compressor drive
 - Machine drive
 - Paper mill drive
 - Cement mill drive
21. In a single phase full wave controlled bridge rectifier, minimum output voltage and maximum output voltage are obtained at which conduction angels?
- $0^\circ, 180^\circ$ respectively
 - $180^\circ, 0^\circ$ respectively
 - $0^\circ, 0^\circ$ respectively
 - $180^\circ, 180^\circ$ respectively
22. Which of the following device should be used as a switch in a low power switched mode power supply (SMPS)?
- GTO
 - MOSFET
 - TRIAC
 - THYRISTOR
23. Which is the most suitable power device for high frequency ($> 100 \text{ KHz}$) switching application?
- Power MOSFET
 - Bipolar junction transistor
 - Schotty diode
 - Microwave transistor
24. Two-on of a thyristor takes place when
- anode to cathode voltage is positive
 - anode to cathode voltage is negative
 - there is a positive current pulse at the gate
 - the anode to cathode voltage is positive and there is a positive current pulse at the gate
25. A motor armature supplied through phase controlled SCRs receives a smoother voltage shape at
- High motor speed
 - Low motor speed
 - Rated motor speed
 - None of the above

ELECTRICAL ANSWERS KEY 15-4-2017

- d
- c
- a
- c
- a
- a
- b
- d
- a
- b
- b
- c
- b
- b
- a
- d
- d
- d
- c
- c
- b
- b
- a
- b
- b
- a
- d
- a