

**ENGINEERING KNOWLEDGE TEST (EKT)
ELECTRICAL AND ELECTRONICS STREAM**

Set No 1/14

BOOKLET SERIES J

Instructions for Candidates

Time Allotted: 30 Minutes

1. Total number of Questions 50. Each Question is of three marks.
 2. One mark will be deducted for every wrong answer.
 3. Do not write or mark on Question Paper.
 4. Question Paper to be returned before leaving the Exam Hall.
-
- Q1. When both inputs of NAND gate are same the operation is
(a) AND (b) NAND (c) NOT (d) NOR
- Q2. Two bulbs when connected in parallel to a source take 100 W each. The total power consumed when they are connected in series with the same source is
(a) 200 W (b) 25 W (c) 100 W (d) 50 W
- Q3. In 8085 microprocessor -----is the highest priority interrupt
(a) trap (b) RST5.5 (c) RST⁺ (d) INTR
- Q4. In digital Electronics a byte is a collection of
(a) 4 bits (b) 8 bits (c) 2 bits (d) 10 bits
- Q5. A Zener diode is generally operated
(a) in a forward biased mode
(b) in a reverse biased mode
(c) with a very large value of reverse bias
(d) all of the above
- Q6. In an AC circuit, resonance occurs when
(a) resistance equals reactive reactance
(b) capacitive reactance equals resistance
(c) capacitive reactance equals reactive reactance
(d) resistance equals capacitive and reactive reactance
- Q7. The sampling rate to reproduce analog signal should be at least
(a) twice the average signal frequency component
(b) twice the fixed frequency component
(c) twice the least signal frequency component
(d) twice the maximum signal frequency component
- Q8. Which semiconductor device acts like a diode & resistor
(a) SCR (b) UJT (c) DIAC (d) TRIAC
- Q9. The basic Ethernet design does not provide
(a) automatic retransmission of a message
(b) addressing
(c) access control
(d) multiple virtual networks
- Q10. Which of the following TCP/IP protocol is used to monitor IP gateways and the networks to which they attach?
(a) SGMP (b) SUMP (c) FTP (d) Both (a) and (b)
- Q11. Which is not amplifier in control system
(a) Amplidyne (b) Metadyne
(c) DC motor (d) DC generator
- Q12. Which of the following is incorrect
(a) Routh's criterion is in time domain
(b) Bode plot is in frequency domain
(c) Nyquist criterion is in time domain
(d) none of the above
- Q13. Pulse communication system that is inherently highly immune to noise is
(a) PCM (b) PWM (c) PAM (d) PPM
- Q14. In a transfer function, the frequencies for which the value of denominator becomes zero are called
(a) Poles (b) Zeros (c) Roots (d) Solutions

SSBCRACKEXAMS.COM

- Q15. A semiconductor photo device uses
 (a) photo emissive effect (b) photo conductive effect
 (c) photo voltaic effect (d) none of the above
- Q16. The adaptive delta modulation avoids
 (a) quantization error (b) slope overload error
 (c) both(a) and (b) (d) none
- Q17. The capacitance between two long parallel conductors depends upon
 (a) diameter of wires (b) distance between wires
 (c) both A and B (d) none of the above
- Q18. Indicate which of the following pulse modulation scheme is analog
 (a) PCM (b) Differential PCM
 (c) Delta modulation (d) PWM
- Q19. Transfer function of a system is used to calculate
 (a) the output for a given input (b) the time constant
 (c) the order of the system (d) the steady state gain
- Q20. In MKS system , pressure is measured in
 (a) Dynes cm^2 (b) dynes / cm^2
 (c) Newton / m^2 (d) gmwt / cm^2
- Q21. Which of the projections shows an object as it looks from front, right, left, top, bottom or back
 (a) oblique projection (b) auxiliary projection
 (c) isometric projection (d) orthographic projection
- Q22. One of the following cannot be used to remove the unwanted sideband in SSB
 (a) filter system (b) balanced modulator
 (c) third method (d) phase shift method
- Q23. A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red, is:
 (a) $\frac{2}{91}$ (b) $\frac{3}{22}$ (c) $\frac{1}{22}$ (d) $\frac{2}{77}$
- Q24. For which operation of a DC motor is generally preferred over an AC motor
 (a) low speed operation (b) high speed operation
 (c) fixed speed operation (d) variable speed operation
- Q25. Formation of rainbow is due to the phenomenon of
 (a) dispersion and total internal reflection
 (b) dispersion
 (c) dispersion and reflection
 (d) light reflection
- Q26. In an FM signal , there are
 (a) no sidebands
 (b) Infinite number of side bands
 (c) two side bands upper and lower
 (d) none of these
- Q27. The efficiency of the transformer is maximum at
 (a) when copper loss is equal to iron loss (b) half load
 (c) 90 % load (d) full load
- Q28. If both inputs of J-K Flip flop are same then it acts as
 (a) D-Type (b) SR FF
 (c) T-Type (d) Both (a) and (b)
- Q29. In nuclear reactions we have conservation of
 (a) mass only (b) energy only
 (c) momentum only (d) mass, energy & momentum

- Q30. A dc series motor
(a) always runs at constant speed
(b) should always be started on load
(c) not suitable for high starting torque
(d) may run away if the field becomes one
- Q31. Fibre optic cable of network forms part of which layer in OSI model
(a) physical (b) network
(c) data link (d) transport
- Q32. In a DC generator, the generated emf is directly proportional to the
(a) number of dummy coils
(b) number of armature parallel paths
(c) pole flux
(d) field current
- Q33. -----is used in reading a CD
(a) LASER (b) MESER
(c) Neon light (d) all of these
- Q34. The value of $\log_{10}x^2 - \log_{10}x$ at $x=10$ is
(a) 4 (b) 2 (c) 0 (d) 1
- Q35. Which of the following is an advantage to using fiber optics data transmission?
(a) resistance to data theft (b) fast data transmission rate
(c) low noise level (d) all of the above
- Q36. A spot frequency from a signal can be rejected by ----- filter
(a) low pass filter (b) band pass filter
(c) notch filter (d) band reject filter
- Q37. Which one of the following transducers is used to obtain dc output position in a position control system
(a) strain gauge (b) load cell
(c) thermistor (d) synchro
- Q38. Copper losses and core losses are
(a) generator losses (b) transformer losses
(c) motor losses (d) voltmeter and ammeter losses
- Q39. Pure semiconductors are poor conductors because
(a) all valence electrons are in pairs
(b) they have no holes
(c) they have no valence electron
(d) they have a number of holes
- Q40. An ideal Current source has
(a) infinite internal resistance (b) small internal resistance
(c) zero internal resistance (d) none of the above
- Q41. A rectangular box with square base is open at the top. The maximum volume of the box made from 1200 m^2 tin is
(a) 2000m^3 (b) 3000m^3
(c) 4000m^3 (d) none of the above
- Q42. Microwave link repeaters are typically 50Km apart because of
(a) atmospheric attenuation (b) earth's curvature
(c) output tube power limitation (d) both (a) and (b)
- Q43. Backlash in a stable control system may cause
(a) high level oscillations (b) overdamping
(c) underdamping (d) low level oscillations
- Q44. The value of $i.(j \times k) + j.(i \times k) + k.(i \times j)$ is equal to
(a) -1 (b) -3 (c) 1 (d) 3

- Q45. The Zener diode is sometimes called :
- (a) current regulator diode (b) voltage regulator diode
(c) constant voltage diode (d) constant Current diode
- Q46. Inductance of coil is directly proportional to square of
- (a) thickness of wire
(b) spacing between adjacent turns
(c) number and spacing between adjacent turns
(d) number of turns
- Q47. A function which completes a pattern within a measurable time frame and repeats that pattern over identical subsequent time frames is called
- (a) continuous function (b) cyclic function
(c) periodic function (d) recurrent function
- Q48. Laplace transform of $3t^4$ is
- (a) $\frac{72}{s^5}$ (b) $\frac{24}{s^4}$ (c) $\frac{18}{s^4}$ (d) $\frac{12}{s^5}$
- Q49. The characteristic impedance of free space is
- (a) 397 Ω (b) 367 Ω
(c) 387 Ω (d) 377 Ω
- Q50. The insulation resistance of cable, 1 Km long is 1 M Ω . Insulation resistance for 2 m is
- (a) 0.002 M Ω (b) 0.5 M Ω (c) 1 M Ω (d) 5 M Ω