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# EKT 2 2016 Question Paper

## EEE/ECE



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

**BOOKLET SERIES 'G'**

**TIME ALLOTTED: 45 MINUTES**

**INSTRUCTIONS FOR CANDIDATES**

1. Total number of Questions 50. Each Question is of three marks.
2. One mark will be deducted for every wrong answer.
3. No marks will be deducted for un-attempted questions.

- Q1. The value of  $\sin \theta + \cos \theta$  will be greatest when  $\theta =$   
(a) 30 (b) 45 (c) 60 (d) 90
- Q2. Out of the following, which is not emitted by radioactive substance?  
(a) Electrons (b) Electromagnetic Radiations  
(c) Alpha Particles (d) Neutrons
- Q3. Railway tracks are banked on curves  
(a) so that necessary centrifugal force may be obtained from the horizontal component & weight of the train  
(b) to avoid frictional force between the tracks and wheels  
(c) so that necessary centripetal force may be obtained from the horizontal component & weight of the train  
(d) so that the train may not fly off in the opposite direction
- Q4. Sound produced at a point is heard by a person after 5 second, while the same sound is heard by another person after 7 seconds. If the speed of sound is 300 m/s, what could be the maximum and minimum distances between the two persons?  
(a) 1.8 km, 0.15 km (b) 2.2 km, 0.20 km  
(c) 2.8 km, 0.25 km (d) 3.6 km, 0.60 km
- Q5. The most abundant rare gas in the atmosphere is  
(a) He (b) Ne  
(c) Ar (d) Xe
- Q6. Quantizing noise occurs in  
(a) PCM (b) Time - division - multiplexer  
(c) FDM (d) PPM
- Q7. Which of the following antennas is best suited for a waveguide  
(a) Biconical (b) Horn  
(c) Helical (d) Discone
- Q8. The peak transmitted power in a radar system is increased by a factor of 16 the maximum range will be increased by a factor of  
(a) 2 (b) 4  
(c) 8 (d) 16
- Q9. In a Communication system if modulating frequency is doubled, the modulation index is also doubling, the system is  
(a) FM (b) AM  
(c) PM (d) Both FM and AM
- Q10. The bandwidth requirement of a telephone channel is  
(a) 3 KHz (b) 5 KHz (c) 10 KHz (d) 15 KHz
- Q11. In class A operation of an amplifier the current flows through the active device for  
(a) Whole of the input cycle  
(b) Half of the input cycle  
(c) More than half of the input cycle  
(d) More than three fourth of the input cycle

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- Q12. P Type Semiconductor material as a whole is  
 (a) Positively charged (b) Negatively charged  
 (c) Electrically neutral (d) Dipole
- Q13. The target cross section is changing, the best system for accurate tracking is  
 (a) Monopulse (b) Conical scanning  
 (c) Sequential locking (d) lobe swithing
- Q14. Waveguides are not used for frequencies below  
 (a) 1GHz (b) 10 GHz  
 (c) 100 GHz (d) 500 MHz
- Q15. Schmitt trigger can be used as a  
 (a) Comparator (b) square wave generator  
 (c) Flip flop (d) all of these
- Q16. Subtracting 0101 from 1110 in binary terms, we get  
 (a) 0110 (b) 1010  
 (c) 1001 (d) 0011
- Q17. The universal gate is  
 (a) AND (b) NOT  
 (c) OR (d) NAND
- Q18. The TWT is sometimes preferred to the magnetron as a radar transmitter output tube because it is  
 (a) Capable of a longer duty cycle (b) A more efficient amplifier  
 (c) More broadband (d) Less noisy
- Q19. Modulation system used for video modulation in TV transmission is  
 (a) DSB (b) DSBSC  
 (c) SSB (d) SSBSC
- Q20. A Yagi antenna produces  
 (a) Figure of eight pattern (b) Broadside pattern  
 (c) End fire array (d) Helical pattern
- Q21. Medium frequency waves travel mainly as  
 (a) Sky waves (b) Surface waves  
 (c) Space waves (d) Ground wave
- Q22. In a two cavity klystron, the input cavity resonator is also known as  
 (a) Velocity modulator (b) Catcher cavity  
 (c) Buncher cavity (d) Accelerator
- Q23. Which of the following can measure pressure directly?  
 (a) LVDT (b) Strain gauge  
 (c) Rotameter tube (d) Bourdon tube
- Q24. \_\_\_\_\_ is an active filter  
 (a) RC filter (b) Notch filter  
 (c) Butterworth filter (d) Band pass filter
- Q25. If the area of the square is increased by 69% the side of the square increases by  
 (a) 13% (b) 30%  
 (c) 39% (d) 130%





- Q26. In 8085 microprocessor \_\_\_\_\_ is the highest priority interrupt  
 (a) INTR (b) RST5.5  
 (c) RST (d) Trap
- Q27. Crossover distortion occurs in \_\_\_\_\_ Amplifiers  
 (a) Push-pull (b) Class-A  
 (c) Class-B (d) Class-AB
- Q28. Voltmeter is used in \_\_\_\_\_  
 (a) Series with the circuit (b) Parallel to the circuit  
 (c) Either of the two combination (d) none
- Q29. One Coulomb passing a point in one second is one \_\_\_\_\_  
 (a) Ohm (b) Charge  
 (c) Ampere (d) Volt
- Q30. Which part of an atom has no electrical charge?  
 (a) Electron (b) Neutron  
 (c) Proton (d) Positron
- Q31. If Current in a circuit is 0 Ampere, it is likely that  
 (a) Circuit is open (b) Circuit is closed  
 (c) Resistance is too low (d) Voltage is too high
- Q32. Voltage source which converts chemical energy to electrical energy is called  
 (a) Solar cell (b) Electrical power supply  
 (c) Electrical generator (d) Battery
- Q33. Piezoelectric effect is carried out in  
 (a) Composite filter (b) Constant K prototype filter  
 (c) Crystal filter (d) Ceramic filters
- Q34. The most common modulation system used for telegraphy is  
 (a) FSK (b) Two tone modulation  
 (c) PCM (d) Single tone modulation
- Q35. Logic gates required to built up a half adder circuit are,  
 (a) Ex-OR gate and NOR gate (b) Ex-OR gate and OR gate  
 (c) Ex-OR gate and AND gate (d) Ex-NOR gate and NAND gate
- Q36. The breakdown that occurs in reverse bias conditions in a narrow junction diode is known as,  
 (a) Zener breakdown (b) The avalanche breakdown  
 (c) Either of the above (d) Reverse breakdowns
- Q37. In case of satellite communication  
 (a) Uplink frequency > Downlink frequency  
 (b) Downlink frequency > Uplink frequency  
 (c) Downlink frequency = Uplink frequency  
 (d) None of the above
- Q38. Change in value of an analog signal to digital, during conversion process produces  
 (a) Quantisation error (b) Nyquist error  
 (c) Resolution error (d) Sampling error
- Q39. If a signal is passing through a Logic gate is inhibited by sending a low into one the input and the output is HIGH, the gate is  
 (a) OR (b) NAND (c) NOR (d) AND





- Q40. The Logic gate that will have HIGH or "1" at its output when one of its inputs is high is  
 (a) NOT (b) OR  
 (c) NOR (d) AND
- Q41. In frequency modulation  
 (a) Frequency of the carrier remains constant  
 (b) Carrier frequency varies in accordance with the modulating signal amplitude  
 (c) Carrier frequency varies in accordance with the modulated signal frequency  
 (d) None of the above
- Q42. Close loop control system is better than the open loop system due to  
 (a) Highest levels of amplification (b) Feedback control  
 (c) Robust design features (d) Easy to manufacture
- Q43. A high PRF would  
 (a) Increase the maximum range (b) Decrease the maximum range  
 (c) Affect range ambiguity (d) Increase the efficiency of radar
- Q44. The general characteristic of semi conductors is  
 (a) Linear device (b) Non linear device  
 (c) Parabolic characteristic devices (d) None of the above.
- Q45. The function of Schmitt trigger is  
 (a) To divide frequency (b) To control frequency  
 (c) To shape a wave (d) To give out a saw tooth wave
- Q46. The disadvantage of two cavity klystron is  
 (a) its efficiency is low  
 (b) output power is 1000  
 (c) It can be used at only one operating frequency  
 (d) None of the above
- Q47. Use of RADAR for Military and civil application is to,  
 (a) Find the velocity of moving target  
 (b) Detection of far off object in air  
 (c) Surveillance of aircrafts/UAV  
 (d) All of the above
- Q48. Stars appears to move from east to west because  
 (a) All stars move from east to west  
 (b) The earth rotates from west to east  
 (c) The earth rotates from east to west  
 (d) The background of the stars moves from west to east
- Q49. The most malleable metal is  
 (a) Platinum (b) silver  
 (c) Iron (d) gold
- Q50. Which layer of the atmosphere is used the most for communication  
 (a) Troposphere (b) Ionosphere  
 (c) Mesosphere (d) Troposphere



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The cover features a blue sky background. It includes an "INSTANT DOWNLOAD" badge, the 55B Crack SHOP logo, and a smartphone icon showing the book's content. Below the text are four small images: a classroom of students, two people working on a machine, a group of students in a lab, and two people at a desk.