**Engineering Assistants Question Papers in Doordarshan and AIR:**

26. Lamps used for street lighting are connected in  
(a) parallel  
(b) series and parallel both  
(c) series  
(d) none of the above  
Ans:a

27. A. C. can be measured with the help of:  
(a) moving coil galvanometer  
(b) hot wire ammeter  
(c) tangent galvanometer  
(d) galvanometer  
Ans:b

28.A p-n junction is said to be forward biased, when  
(a) the positive pole of the battery is joined to the p-semiconductor and negative pole to the nsemiconductor  
(b) the positive pole of the battery is joined to the n-semiconductor and negative pole of the  
battery is joined to the p-semiconductor  
(c) the positive pole of the battery is connected to n- semiconductor and p- semiconductor  
(d) a mechanical force is applied in the forward direction  
Ans :a

29. At absolute zero, Si acts as ?  
(a) non-metal  
(b) metal  
(c) insulator  
(d) none of these  
Ans :a

30. When N-type semiconductor is heated ?  
(a) number of electrons increases while that of holes decreases  
(b) number of holes increases while that of electrons decreases  
(c) number of electrons and holes remain same  
(d) number of electron and holes increases equally.  
Ans :d

31. Radiowaves of constant amplitude can be generated with  
(a) FET  
(b) filter  
(c) rectifier  
(d) oscillator  
Ans :d

32. In a common base amplifier the phase difference between the input signal voltage and the  
output  
voltage is ?  
(a) 0  
(b) pi/4  
(c)pi/2  
(d) p  
Ans :d

33. When a triode is used as an amplifier the phase difference between the input signal voltage  
and the output is ?  
(a) 0  
(b)pi  
(c) pi/2  
(d)pi/4  
Ans :b

34. The depletion layer in the P-N junction region is  
caused by?  
(a) drift of holes  
(b) diffusion of charge carriers  
(c) migration of impurity ions  
(d) drift of electrons  
Ans: b

35. The following truth table corresponds to which Logic gate  
A B Output  
0 0 0  
0 1 1  
1 0 1  
1 1 1  
(a)NAND  
(b) OR  
(c)AND  
(d) XOR  
Ans :b

36. To use a transistor as an amplifier  
(a) The emitter base junction is forward biased and the base collector junction is reversed biased  
(b) no bias voltage is required  
(c) both junction are forward biased  
(d) both junctions are reversed biased.  
Ans :a

37. Which one of the following is the weakest kind of the bonding in solids  
(a) ionic  
(b) metallic  
(c) Vander Walls  
(d) covalent  
Ans :c

38.For amplification by a triode, the signal to be amplified is given to  
(a) the cathode  
(b) the grid  
(c) the glass-envelope  
(d) the anode  
Ans :b

39. A piece of copper and other of germanium are cooled from the room temperature to 80K,  
then  
(a) resistance of each will increase  
(b) resistance of copper will decrease  
(c) the resistance of copper will increase while that of germanium will decrease  
(d) the resistance of copper will decrease while that of germanium will increase  
Ans:d

40. Diamond is very hard because ?  
(a) it is covalent solid  
(b) it has large cohesive energy  
(c) high melting point  
(d) insoluble in all solvents  
Ans:b

41. The part of the transistor which is heavily doped to produce large number of majority carriers  
is  
(a) emitter  
(b) base  
(c) collector  
(d) any of the above depending upon the nature of transistor  
Ans:a

42. An Oscillator is nothing but an amplifier with  
(a) positive, feedback  
(b) negative feedback  
(c)large gain  
(d) no feedback  
Ans:a

43. When a P-N junction diode is reverse biased the flow of current across the junction is mainly  
due  
to  
(a) diffusion of charge  
(b) drift charges  
(c) depends on the nature o material  
(d) both drift and diffusion of charges  
Ans:b

44. Which of the following gates corresponds to the truth table given below?  
A B Output  
1 1 0  
0 1 1  
1 0 1  
0 0 1  
(a) NAND  
(b) OR  
(c) AND  
(d) XOR  
Ans:a

45. Which of the following, when added as an impurity, into the silicon, produces n-type semi  
conductor  
(a)Phosphorous  
(b) Aluminium  
(c)Magnesium  
(d) both ‘b’ and ‘c’  
Ans:a

46. The current gain for a transistor working as common-base amplifier is 0.96. If the emitter  
current is 7.2 mA, then the base current is  
(a)0.29mA  
(b)0.35mA  
(c)0.39 mA  
(d) 0.43 mA  
Ans:a

47. When a n-p-n transistor is used as an amplifier then ?  
(a) the electrons flow from emitter to collector  
(b) the holes flow from emitter to collector  
(c) the electrons flow from collector to emitter  
(d) the electrons flow from battery to emitter  
Ans:a

48. When arsenic is added as an impurity to silicon, the resulting material is?  
(a) n-type semiconductor  
(b) p-type semiconductor  
(c) n-type conductor  
(d) Insulator  
Ans:a

49. To obtain a p-type germanium semiconductor,it must be doped with ?  
(a)arsenic  
(b)antimony  
(c)indium  
(d)phosphorus  
Ans:a

50. A semi-conducting device is connected in a series circuit with a battery and a resistance. A  
current is found to pass through the circuit. If the polarity of the battery is reversed, the current  
drops to almost zero. The device may be  
(a) A p-n junction  
(b) An intrinsic semi-conductor  
(c) A p-type semi-conductor  
(d) An n-type semi-conductor  
Ans:a