

MC-7
PGDBT
TEST PAPER-2010

3007

TIME : 2.30 Hrs

MARKS : 200

Date of Entrance Test (To be filled by the Candidate)

(Signature of Invigilator)

INSTRUCTIONS

Please read the following instructions **CAREFULLY** before you begin answering the question paper.

1. Check the question paper for any missing pages etc.
2. Write your **Roll Number** in the space marked for it below.
3. Write the correct answer (A, B, C, or D) legibly and clearly without any over-writing in the answer-sheet given at end of this question paper.
4. **Do not write** your name anywhere.
5. The question paper has two Sections— A & B. You have to answer all questions.
6. Section-A has seventy objective type questions each carrying one mark.
7. Section-B has three descriptive questions. Each carries five marks. Please answer these questions in the blanks sheets provided at the end of this question paper.
8. No extra answer sheet or loose sheets will be provided, therefore please limit your answers appropriately.
9. Do not tear my pages from this booklet. You have to submit the complete set to the invigilator.

Code No. (To be filled by the Office)

	Section A	Section B	Total
Total Marks Obtained			

(Exam Suprintendent)

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Section – A

1.	An open resistor has	<input type="checkbox"/>	(a) Infinite current through it	<input type="checkbox"/>	(b) Zero voltage across it	<input type="checkbox"/>
		<input type="checkbox"/>	(c) Infinite voltage across it	<input type="checkbox"/>	(d) Zero current through it	<input type="checkbox"/>
2.	A fuse protects the equipment by	<input type="checkbox"/>	(a) breaking the circuit	<input type="checkbox"/>	(b) shorting the circuit	<input type="checkbox"/>
		<input type="checkbox"/>	(c) by grounding the equipment	<input type="checkbox"/>	(d) None of the above	<input type="checkbox"/>
3.	The Norton network current is sometimes called	<input type="checkbox"/>	(a) Shorted load current	<input type="checkbox"/>	(b) Open load current	<input type="checkbox"/>
		<input type="checkbox"/>	(c) Thevenin's current	<input type="checkbox"/>	(d) Thevenin's voltage	<input type="checkbox"/>
4.	The current in a conductor flows in the direction	<input type="checkbox"/>	(a) Of flow of electrons	<input type="checkbox"/>	(b) Opposite to flow of electrons	<input type="checkbox"/>
		<input type="checkbox"/>	(c) Flow of holes	<input type="checkbox"/>	(d) None of the above	<input type="checkbox"/>
5.	Which of the following is approximately equal to room temperature?	<input type="checkbox"/>	(a) 0 °C	<input type="checkbox"/>	(b) 25 °C	<input type="checkbox"/>
		<input type="checkbox"/>	(c) 25 °F	<input type="checkbox"/>	(d) 25 °K	<input type="checkbox"/>
6.	What causes formation of "Depletion layer"	<input type="checkbox"/>	(a) Doping	<input type="checkbox"/>	(b) Recombination	<input type="checkbox"/>
		<input type="checkbox"/>	(c) Barrier Potential	<input type="checkbox"/>	(d) Non of these	<input type="checkbox"/>

7.	Which is the most commonly used semiconductor?	
	(a) Copper <input type="checkbox"/>	(b) Germanium <input type="checkbox"/>
	(c) Silicon <input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

8.	The reverse biased ideal diode can be represented by	
	(a) A close switch	<input type="checkbox"/>
	(b) An open switch	<input type="checkbox"/>
	(c) Can not be represented by a switch	<input type="checkbox"/>
	(d) Both open or closed switch	<input type="checkbox"/>

9.	An external voltage source is applied to a p-type semiconductor. If the left end of the conductor is positive which way the majority carriers will flow?	
	(a) Left <input type="checkbox"/>	(b) Right <input type="checkbox"/>
	(c) In the direction of current <input type="checkbox"/>	(d) Non of these <input type="checkbox"/>

10.	What kind of device is a Diode?	
	(a) Non linear <input type="checkbox"/>	(b) Unipolar <input type="checkbox"/>
	(c) Linear <input type="checkbox"/>	(d) Bilateral <input type="checkbox"/>

11.	For satellite television broadcasting, the satellite is placed in	
	(a) Low earth orbit <input type="checkbox"/>	(b) Medium Earth orbit <input type="checkbox"/>
	(c) Geo stationary orbit <input type="checkbox"/>	(d) Polar orbit <input type="checkbox"/>

12.	Frequency of failure of a network and recovery time after failure are measure of	
	(a) Performance <input type="checkbox"/>	(b) Reliability <input type="checkbox"/>
	(c) Security <input type="checkbox"/>	(d) Feasibility <input type="checkbox"/>

13.	VHF covers frequencies		
	(a) 300 KHz to 3 MHz	<input type="checkbox"/>	(b) 3 to 30 MHz <input type="checkbox"/>
	(c) 30 to 300 MHz	<input type="checkbox"/>	(d) 300MHz to 3GHz <input type="checkbox"/>

14.	MPEG-2 Transport stream packet size is		
	(a) 64 bytes	<input type="checkbox"/>	(b) 128 bytes <input type="checkbox"/>
	(c) 184 bytes	<input type="checkbox"/>	(d) 256 bytes <input type="checkbox"/>

15.	Multiplexing involves		
	(a) Multiple paths and one channel		<input type="checkbox"/>
	(b) One path one channel		<input type="checkbox"/>
	(c) Multiple paths and multiple channels		<input type="checkbox"/>
	(d) One path and multiple channels		<input type="checkbox"/>

16.	In ADSL the largest frequency band is utilized for		
	(a) POTs	<input type="checkbox"/>	(b) Downstream communication <input type="checkbox"/>
	(c) Upstream communication	<input type="checkbox"/>	(d) None of above <input type="checkbox"/>

17.	Error correction is usually done in the following layer of OSI model		
	(a) Network	<input type="checkbox"/>	(b) Physical <input type="checkbox"/>
	(c) Data	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

18.	Regulation of the rate of transmission of data frames is known as		
	(a) Line control	<input type="checkbox"/>	(b) Data rate control <input type="checkbox"/>
	(c) Switch control	<input type="checkbox"/>	(d) Flow control <input type="checkbox"/>

19.	Which of the following has highest data rates			
	(a) 10 Base 5	<input type="checkbox"/>	(b) 10 Base T	<input type="checkbox"/>
	(c) FDDI	<input type="checkbox"/>	(d) Twisted pair	<input type="checkbox"/>

20.	If the two inputs of a NAND gate are "1" and "0" the out will be			
	(a) 0	<input type="checkbox"/>	(b) 1	<input type="checkbox"/>
	(c) 10	<input type="checkbox"/>	(d) 11	<input type="checkbox"/>

21.	Binary equivalent of $(43)_8$ is			
	(a) 100001	<input type="checkbox"/>	(b) 110011	<input type="checkbox"/>
	(c) 100010	<input type="checkbox"/>	(d) 100011	<input type="checkbox"/>

22.	N Channel MOSFET is better than P Channel MOSFET because it –			
	(a) is TTL compatible	<input type="checkbox"/>	(b) has better noise immunity	<input type="checkbox"/>
	(c) is faster	<input type="checkbox"/>	(d) has better drive capability	<input type="checkbox"/>

23.	A Thyristor can be used as a			
	(a) Resistor	<input type="checkbox"/>	(b) Amplifier	<input type="checkbox"/>
	(c) Switch	<input type="checkbox"/>	(d) Power source	<input type="checkbox"/>

24.	The generated EMF of a dc generator depends on			
	(a) Frequency	<input type="checkbox"/>	(b) Commutation	<input type="checkbox"/>
	(c) Brush contact drop	<input type="checkbox"/>	(d) Speed	<input type="checkbox"/>

25.	A transformer has 2600V primary and 260V secondary coils. The transformation ratio is		
	(a) 10	<input type="checkbox"/>	(b) 100 <input type="checkbox"/>
	(c) 52	<input type="checkbox"/>	(d) 26 <input type="checkbox"/>

26.	The regulations of two transformers are (i) 30% and (ii) 97%. The one having better performance is		
	(a) the first	<input type="checkbox"/>	(b) the second <input type="checkbox"/>
	(c) both will have same	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

27.	The single phase power supply in India is		
	(a) 440 V, 50 Hz	<input type="checkbox"/>	(b) 440V, 60 Hz <input type="checkbox"/>
	(c) 220V, 50 Hz	<input type="checkbox"/>	(d) 220 V, 60 Hz <input type="checkbox"/>

28.	When a voltage signal is applied to an oscilloscope it indicates		
	(a) dc value	<input type="checkbox"/>	(b) rms value <input type="checkbox"/>
	(c) average value	<input type="checkbox"/>	(d) peak to peak value <input type="checkbox"/>

29.	The internal resistance of an ammeter should be		
	(a) Very small	<input type="checkbox"/>	(b) Very high <input type="checkbox"/>
	(c) Medium	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

30.	A CRO can display		
	(a) dc signals	<input type="checkbox"/>	(b) ac signals <input type="checkbox"/>
	(c) both dc and ac signals	<input type="checkbox"/>	(d) Time invariant signals <input type="checkbox"/>

31.	Insulation resistance is checked by			
	(a) Ohm meter	<input type="checkbox"/>	(b) Multimeter	<input type="checkbox"/>
	(c) Line tester	<input type="checkbox"/>	(d) Megger	<input type="checkbox"/>

32.	The most widely used LC Oscillator is			
	(a) Armstrong	<input type="checkbox"/>	(b) Clapp	<input type="checkbox"/>
	(c) Colpits	<input type="checkbox"/>	(d) Hartley	<input type="checkbox"/>

33.	Two resistances of 2 Ohms each are connected in parallel and this combination is then connected in series with another 2 Ohm resistance. The total resistance is			
	(a) 6 Ohm	<input type="checkbox"/>	(b) 1/3 Ohm	<input type="checkbox"/>
	(c) 3 Ohm	<input type="checkbox"/>	(d) 4/3 Ohm	<input type="checkbox"/>

34.	2's complement of the binary number 1001 is			
	(a) 0110	<input type="checkbox"/>	(b) 0111	<input type="checkbox"/>
	(c) 1010	<input type="checkbox"/>	(d) 1000	<input type="checkbox"/>

35.	The decimal equivalent of binary number $(1011)_2$ is			
	(a) $(11)_{10}$	<input type="checkbox"/>	(b) $(12)_{10}$	<input type="checkbox"/>
	(c) $(8)_{10}$	<input type="checkbox"/>	(d) $(10)_{10}$	<input type="checkbox"/>

36.	A bridge rectifier converts ___?___ cycle of the applied ac			
	(a) 1/4th	<input type="checkbox"/>	(b) Half	<input type="checkbox"/>
	(c) 3/4th	<input type="checkbox"/>	(d) Full	<input type="checkbox"/>

37.	The output of a LED is		
	(a) Voltage	<input type="checkbox"/>	(b) Current <input type="checkbox"/>
	(c) Light	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

38.	The power rating of large electrical equipment is normally given in		
	(a) KW	<input type="checkbox"/>	(b) MW <input type="checkbox"/>
	(c) KVA	<input type="checkbox"/>	(d) W <input type="checkbox"/>

39.	An auto transformer has		
	(a) One winding		<input type="checkbox"/>
	(b) Two windings		<input type="checkbox"/>
	(c) Three windings		<input type="checkbox"/>
	(d) can have any number of windings		<input type="checkbox"/>

40.	The condition for maximum efficiency of a transformer is		
	(a) Copper loss \gg Iron loss		<input type="checkbox"/>
	(b) Copper loss \ll Iron loss		<input type="checkbox"/>
	(c) Copper loss = Iron loss		<input type="checkbox"/>
	(d) it is interdependent of Copper loss and Iron loss		<input type="checkbox"/>

41.	Most commonly used transducer in radio broadcasting is		
	(a) Transmitter	<input type="checkbox"/>	(b) Studio <input type="checkbox"/>
	(c) Mixer	<input type="checkbox"/>	(d) Microphone <input type="checkbox"/>

42.	The voltage in a pure inductive circuit		
	(a) Leads current by 90°	<input type="checkbox"/>	(b) Lags current by 90° <input type="checkbox"/>
	(c) in phase with current	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

43.	"Current carrying conductor in a magnetic field experiences force" is the basic principle of		
	(a) Generator	<input type="checkbox"/>	(b) Motor <input type="checkbox"/>
	(c) Both (a) & (b)	<input type="checkbox"/>	(d) Transformer <input type="checkbox"/>

44.	"The algebraic sum of currents meeting at any point of the network at any instant is zero" is		
	(a) Ohm's law	<input type="checkbox"/>	(b) Kirchoff's law <input type="checkbox"/>
	(c) Lorentz's law	<input type="checkbox"/>	(d) Faraday's law <input type="checkbox"/>

45.	Two antenna have gain G_1 and G_2 such that $G_1 > G_2$ then,		
	(a) First antenna will amplify the signal more		<input type="checkbox"/>
	(b) Second antenna will amplify the signal more		<input type="checkbox"/>
	(c) Antenna does not amplify the signal		<input type="checkbox"/>
	(d) None of the above		<input type="checkbox"/>

46.	An oscillator always needs an amplifier with		
	(a) Positive feedback	<input type="checkbox"/>	(b) Negative feedback <input type="checkbox"/>
	(c) Both types of feedback	<input type="checkbox"/>	(d) An LC tank circuit <input type="checkbox"/>

47.	The output of a Digital to analog (D/A) converter with four inputs will have		
	(a) 4 values	<input type="checkbox"/>	(b) 8 values <input type="checkbox"/>
	(c) 16 values	<input type="checkbox"/>	(d) one value <input type="checkbox"/>

48.	The purpose of AGC is		
	(a) Increase the gain when input increases	<input type="checkbox"/>	<input type="checkbox"/>
	(b) Decrease the gain when input decrease	<input type="checkbox"/>	<input type="checkbox"/>
	(c) Convert voltage to current	<input type="checkbox"/>	<input type="checkbox"/>
	(d) Keep the output nearly constant	<input type="checkbox"/>	<input type="checkbox"/>

49.	The frequency of dc signal is		
	(a) Infinite	<input type="checkbox"/>	(b) Zero <input type="checkbox"/>
	(c) 50 Hz	<input type="checkbox"/>	(d) 60 Hz <input type="checkbox"/>

50.	If the power gain doubles, the decibel power gain increases by		
	(a) 2 dB	<input type="checkbox"/>	(b) 3dB <input type="checkbox"/>
	(c) 4 dB	<input type="checkbox"/>	(d) will remain same <input type="checkbox"/>

51.	A SCR is usually turned on by		
	(a) Gate trigger	<input type="checkbox"/>	(b) Breakdown <input type="checkbox"/>
	(c) Holding current	<input type="checkbox"/>	(d) All of the above <input type="checkbox"/>

52.	The main advantage of CMOS is		
	(a) Higher power rating	<input type="checkbox"/>	(b) Smaller size <input type="checkbox"/>
	(c) Small signal operation	<input type="checkbox"/>	(d) Lower power consumption <input type="checkbox"/>

53.	An Unipolar transistor uses		
	(a) free electrons only		<input type="checkbox"/>
	(b) holes only		<input type="checkbox"/>
	(c) both free electrons and holes		<input type="checkbox"/>
	(d) either one or the other but not both		<input type="checkbox"/>

54.	The current in PNP transistor is		
	(a) usually smaller than NPN current	<input type="checkbox"/>	(b) opposite to NPN current <input type="checkbox"/>
	(c) usually larger than NPN current	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

55.	The number of junctions in a transistor is		
	(a) 4	<input type="checkbox"/>	(b) 3 <input type="checkbox"/>
	(c) 2	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

56.	20 PCs are to be wired so that any computer can communicate with any other. How many interconnecting links are required?		
	(a) 400	<input type="checkbox"/>	(b) 200 <input type="checkbox"/>
	(c) 190	<input type="checkbox"/>	(d) 100 <input type="checkbox"/>

57.	A circuit that removes positive and negative parts of a waveform is called		
	(a) Clipper	<input type="checkbox"/>	(b) Rectifier <input type="checkbox"/>
	(c) Clamper	<input type="checkbox"/>	(d) Limiter <input type="checkbox"/>

58.	"RAID" is used in		
	(a) Network Management	<input type="checkbox"/>	(b) Network transmission <input type="checkbox"/>
	(c) Network storage	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

59.	In a peer to peer LAN configuration which of the following is (are) true		
	(a) Any PC can serve as client or server		<input type="checkbox"/>
	(b) Only the largest & fastest PC can be the server		<input type="checkbox"/>
	(c) A PC can not have access to any other PC's or its peripherals		<input type="checkbox"/>
	(d) All of the above		<input type="checkbox"/>

60.	Most widely used unshielded twisted pair (UTP) is		
	(a) CAT1	<input type="checkbox"/>	(b) CAT5 <input type="checkbox"/>
	(c) CAT7	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

61.	The impedance of dipole antenna is		
	(a) 150 Ohm	<input type="checkbox"/>	(b) 73 Ohm <input type="checkbox"/>
	(c) 50 Ohm	<input type="checkbox"/>	(d) Zero Ohm <input type="checkbox"/>

62.	The most popular method for radio signal propagation is		
	(a) Ground wave propagation	<input type="checkbox"/>	(b) Sky wave propagation <input type="checkbox"/>
	(c) Cable	<input type="checkbox"/>	(d) satellite <input type="checkbox"/>

63.	The address size in IPv6 is		
	(a) 32 bits	<input type="checkbox"/>	(b) 64 bits <input type="checkbox"/>
	(c) 128 bits	<input type="checkbox"/>	(d) 256 bits <input type="checkbox"/>

64.	The IP address 140.179.220.200 is of which type?		
	(a) Class B	<input type="checkbox"/>	(b) Class D <input type="checkbox"/>
	(c) Class A	<input type="checkbox"/>	(d) Class C <input type="checkbox"/>

65.	In which frequency band does the DTH television services operate?		
	(a) C Band	<input type="checkbox"/>	(b) Ku band <input type="checkbox"/>
	(c) VHF Band	<input type="checkbox"/>	(d) UHF band <input type="checkbox"/>

66.	PIN diode has		
	(a) An intrinsic section in between P & N sections	<input type="checkbox"/>	<input type="checkbox"/>
	(b) Only P & N sections	<input type="checkbox"/>	<input type="checkbox"/>
	(c) low resistance when reverse biased	<input type="checkbox"/>	<input type="checkbox"/>
	(d) None of the above	<input type="checkbox"/>	<input type="checkbox"/>

67.	In fibre LAN the signal in the interconnecting cable is		
	(a) current	<input type="checkbox"/>	(b) voltage <input type="checkbox"/>
	(c) light	<input type="checkbox"/>	(d) digital <input type="checkbox"/>

68.	The unit of electric charge is		
	(a) Coulomb	<input type="checkbox"/>	(b) Ohm <input type="checkbox"/>
	(c) Ampere	<input type="checkbox"/>	(d) Faraday <input type="checkbox"/>

69.	What device provides functions similar to a hub in wireless networks?		
	(a) Wireless local area network	<input type="checkbox"/>	(b) Optical repeater <input type="checkbox"/>
	(c) Virtual local area network	<input type="checkbox"/>	(d) Wireless access point <input type="checkbox"/>

70.	The electromagnetic waves travel at the speed of		
	(a) Sound	<input type="checkbox"/>	(b) Light <input type="checkbox"/>
	(c) Air	<input type="checkbox"/>	(d) None of the above <input type="checkbox"/>

Section B

(5 marks each)

1. The television programs are produced in studios. Describe the different methods for sending these programs to consumer house-hold.
2. Explain analog and digital signals? Give the advantages and disadvantages of digitalization of signals.
3. What role do you foresee for a technical person in media industry. Discuss how a technical person can make contribution in program production.

For Section – B

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