

**Hall Ticket Number**

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(To be filled by the Candidate)

S. No.

**123451**

**Booklet Code**

**A**

**SET CODE**

**PCC-2**

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Signature of the Invigilator

## **INSTRUCTIONS TO THE CANDIDATE**

**(Read the Instructions carefully before Answering)**

1. Separate Optical Mark Reader (OMR) Answer Sheet is supplied to you along with Question Paper Booklet. Please read and follow the instructions on the OMR Answer Sheet for marking the responses and the required data.
2. The candidate should ensure that the booklet code printed on OMR sheet and question paper booklet code supplied are same.
3. **Immediately on opening the Question Paper Booklet by tearing off the paper seal please check for (i) The same booklet code (A/B/C/D) on each page, (ii) Serial Number of the questions (1-200), (iii) The number of pages and (iv) Correct Printing.** In case of any defect, please report to the invigilator and ask for replacement of booklet with same code within five minutes from the commencement of the test.
4. Electronic gadgets like Cell Phone, Pager, Calculator, Watches and Mathematical/Log Tables are not permitted into the examination hall.
5. Darken the appropriate circles of 1, 2, 3 or 4 in the OMR sheet corresponding to correct or the most appropriate answer to the concerned question number in the sheet. Darkening of more than one circle against any question automatically gets invalidated.
6. Rough work should be done only in the space provided in the Question Paper Booklet.
7. Return the OMR Answer Sheet and Question paper booklet to the invigilator before leaving the examination hall. Failure to return is liable for criminal action.
8. The duplicate OMR sheet shall be taken away by the candidate and should be preserved till the declaration of results.

**This Booklet consists of 21 Pages for 200 Questions + 02 Pages of Rough Work + 01 Title Page i.e. Total 24 Pages.**

**P18**

**PCC-2**

**Booklet Code** **A**

**SPACE FOR ROUGH WORK**

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Time : 3 Hours

Marks : 200

**Instructions :**

- (i) Each question carries *one* mark.
- (ii) Choose the correct or most appropriate answer from the given options to the following questions and darken, with blue/black ball point pen, the corresponding digit **1, 2, 3** or **4** in the circle pertaining to the question number concerned in the OMR Answer Sheet, separately supplied to you.

- 
1. The power consumption in a parallel RL circuit with  $R = 45 \Omega$  and  $X_L = 1100 \Omega$ , when fed by a 24 volts AC supply is \_\_\_\_\_
- (1) 313.45 W      (2) 12.8 W      (3) 44.96 W      (4) 22.3 W
- 
2. The power factor of a pure inductive load is \_\_\_\_\_
- (1) 0      (2) 1      (3) 0.707 lag      (4) 0.8 lead
- 
3. An RL integrator acts as a \_\_\_\_\_
- (1) Low pass filter      (2) High pass filter  
(3) Band pass filter      (4) Band rejection filter
- 
4. What is a circuit that produces short-duration spikes?
- (1) An RL integrator      (2) A timing circuit  
(3) A trigger pulse generator      (4) A pulse waveform-to-do-converter
- 
5. For a capacitor to completely charge in an RC integrator, the pulse width must be \_\_\_\_\_ 5 time constants.
- (1) less than      (2) greater than  
(3) less than or equal to      (4) greater than or equal to
- 
6. To plot the phasor diagram of a parallel RLC circuit, which of the following is taken as reference?
- (1) current      (2) reactance      (3) voltage      (4) resistance
- 
7. In a series R-L circuit, the phase angle between voltage and current is \_\_\_\_\_
- (1)  $0^\circ$       (2)  $90^\circ$       (3)  $45^\circ$       (4)  $120^\circ$
- 
8. The unit for Flux linkages are \_\_\_\_\_
- (1) Wb      (2) Wb-Turn  
(3) Volts      (4) Henry

9. If voltage lags the current in an RLC circuit, then it acts as \_\_\_\_\_  
 (1) Capacitive circuit (2) Inductive circuit  
 (3) Resistive circuit (4) Resonating circuit
- 
10. Which of the following describes the ability of a circuit to respond to certain frequencies while rejecting all others.  
 (1) Bandwidth (2) Sensitivity (3) Selectivity (4) Quality factor
- 
11. When a parallel tank circuit is used in services with an output load resistor the filter is \_\_\_\_\_  
 (1) Low pass (2) Band-pass (3) High pass (4) Band-stop
- 
12. The electrical energy absorbed by a coil is stored in the form of :  
 (1) an electric field (2) a force field  
 (3) a magnetic field (4) an electrostatic field
- 
13. The inductance of a coil can be increased by using \_\_\_\_\_ as core.  
 (1) Iron (2) Wood (3) Concrete (4) Copper
- 
14. Which of the following is used to improve the power factor in industries?  
 (1) Resistor (2) Capacitor  
 (3) Inductor (4) Resistor and Inductor
- 
15. What is total inductance in the given circuit between a and b?  
 (1) 160 mH  
 (2) 300 mH  
 (3) 900 mH  
 (4) 600 mH
- The diagram shows a circuit with two terminals, 'a' at the top and 'b' at the bottom. Three inductors are connected in parallel between these terminals. The first inductor is labeled L<sub>1</sub> with a value of 600mH. The second inductor is labeled L<sub>2</sub> with a value of 300mH. The third inductor is labeled L<sub>3</sub> with a value of 800mH.
- 
16. A magnetic field has  
 (1) polar fields (2) lines of force  
 (3) magnetomotive force (4) lines of reluctance
- 
17. What is inductive reactance of a coil having Q-factor 60 and the winding resistance 5Ω?  
 (1) 0.083 Ω (2) 12 Ω (3) 30 Ω (4) 300 Ω
- 
18. When an emf is induced in coil due to the changes in flux of other coil, the process is known as \_\_\_\_\_  
 (1) Induction (2) Conduction  
 (3) Pollution (4) Radiation



28. The power which flows in both directions between source and load is \_\_\_\_\_  
(1) Reactive Power (2) Active Power  
(3) Apparent Power (4) Independent Power
- 
29. Which material has the highest dielectric strength?  
(1) Air (2) Paper (3) Mica (4) Oil
- 
30. The reactance of a coil \_\_\_\_\_ with increase in frequency.  
(1) Increases (2) Decreases  
(3) Becomes zero (4) Remains same
- 
31. A rectangular wave that has a duty cycle of 50% could be called a  
(1) Sine wave (2) Sawtooth wave  
(3) Square wave (4) Triangular wave
- 
32. What is the fourth harmonic of a fundamental frequency of 400 Hz ?  
(1) 100 Hz (2) 4 KHz (3) 8 KHz (4) 1.6 KHz
- 
33. When transistors are used in digital circuits they usually operate in the :  
(1) Active region (2) Breakdown region  
(3) Saturation & cutoff region (4) Linear region
- 
34. A transistor has a  $\beta_{DC}$  of 250 and a base current  $I_B = 20 \mu A$ . The collector current  $I_C$  equals:  
(1)  $500 \mu A$  (2) 5 mA (3) 50 mA (4) 5A
- 
35. In a BJT the current ratio  $I_C/I_E$ , which is usually less than one is called \_\_\_\_\_  
(1) beta (2) alpha (3) theta (4) omega
- 
36. With the positive probe on an NPN base, an ohmmeter reading between the other transistor terminals should be  
(1) open (2) infinite  
(3) low resistance (4) high resistance
- 
37. In Common Emitter configuration, an emitter resistor is used for :  
(1) Stabilization (2) AC signal bypass  
(3) Collector bias (4) Higher gain
- 
38. The ends of a load line drawn on a family of curves determine :  
(1) Saturation and cutoff (2) The operating point  
(3) The power curve (4) The amplification factor

39. The Common-Base configuration is used to provide which type of gain?  
(1) Power (2) Current (3) Resistance (4) Voltage
- 
40. What is the current gain for a common-base configuration where  $I_E = 4.2 \text{ mA}$  and  $I_C = 4.0 \text{ mA}$ ?  
(1) 16.80 (2) 1.05 (3) 0.20 (4) 0.95
- 
41. Most of the electrons in the base of an NPN transistor flow :  
(1) Out of the base lead (2) Into the emitter  
(3) Into the collector (4) Into the base
- 
42. What is the collector current for a CE configuration where beta is 100 and base current is  $30 \mu\text{A}$ ?  
(1)  $30 \mu\text{A}$  (2)  $3 \mu\text{A}$  (3) 3 A (4) 3 mA
- 
43. Intrinsic semiconductor material is characterized by a valence shell of how many electrons?  
(1) 1 (2) 4 (3) 5 (4) 3
- 
44. What causes the depletion region in a pn junction?  
(1) Doping (2) Barrier potential  
(3) Ions (4) Diffusion
- 
45. A commonly used pentavalent material is :  
(1) Arsenic (2) Boron (3) Gallium (4) Neon
- 
46. Forward bias of a silicon PN-junction will produce a barrier voltage of approximately  
(1) 0.2 V (2) 0.3 V (3) 0.7 V (4) 0.8 V
- 
47. Minority carriers are many times activated by  
(1) Heat (2) Pressure (3) Dopants (4) Forward Bias
- 
48. Which of the following can not actually move?  
(1) Majority carriers (2) Ions  
(3) Holes (4) Electrons
- 
49. JFET  
(1) is a current-controlled device (2) is a voltage controlled device  
(3) has a low input resistance (4) is always forward biased

50. A source follower has a voltage gain ( $A_v$ ) of

- (1)  $A_v = g_m R_d$  (2)  $A_v = \frac{g_m R_s}{(1 + g_m R_s)}$   
(3)  $A_v = g_m R_s$  (4)  $A_v = \frac{g_m R_d}{(1 + g_m R_d)}$
- 

51. In a class-B, push pull amplifier, the transistors are biased slightly above cutoff to avoid

- (1) Cross over distortion (2) Usually high efficiency  
(3) Negative feedback (4) A low input impedance
- 

52. To get a negative gate-source voltage in a self-biased JFET circuit, which of the following should be used?

- (1) Source Resistor (2) Voltage divider  
(3) Ground (4) Negative gate supply voltage
- 

53. What is the input impedance of a common-gate configured JFET?

- (1) Moderate (2) High (3) Very High (4) Very low
- 

54. A very simple bias for a D-MOSFET is called :

- (1) self biasing (2) gate biasing  
(3) zero biasing (4) voltage-divider biasing
- 

55. When an input signal reduces the channel size in a HOSFET, the process is called :

- (1) depletion (2) enhancement  
(3) gate charge (4) substrate connecting
- 

56. 7812 regulator IC provides \_\_\_\_\_

- (1) +5V (2) -5V (3) +12V (4) -12V
- 

57. 7912 regular IC provides \_\_\_\_\_

- (1) +5V (2) -5V (3) +12V (4) -12V
- 

58. The ripple of a filter output having a  $20V_{dc}$  component and a  $1.7V_r$ (rms) ac component is

- (1) 6% (2) 8.5% (3) 85% (4) 58%
- 

59. The purpose of an additional RC filter section in a power supply circuit is

- (1) Increase the dc voltage component (2) Increase the ac voltage component  
(3) Decrease the ac voltage component (4) Decrease the dc voltage component

60. The maximum power in side bands of a Tone modulated AM signal is equal to

- (1)  $\frac{3P_c}{2}$                       (2)  $P_c$                       (3)  $2 P_c$                       (4)  $\frac{P_c}{3}$

Where  $P_c$  is the carrier power

61. How many diodes conduct in the full-wave bridge rectifier while the capacitor is being charged?

- (1) 1                      (2) 2                      (3) 3                      (4) 4

62. Voltage regulation is calculated for \_\_\_\_\_

- (1) Diodes                      (2) D.C motors  
(3) Induction motors                      (4) Generators

63. The \_\_\_\_\_ values of capacitor filter provide \_\_\_\_\_ ripple and \_\_\_\_\_ average voltage.

- (1) Larger, more, higher                      (2) Smaller, less, power  
(3) Smaller, more, higher                      (4) Larger, less, higher

64. The intermediate frequency in a standard AM receiver is

- (1) 455 Hz                      (2) 455 KHz                      (3) 455 MHz                      (4) 455 GHz

65. Schottky diodes are also known as

- (1) Hot carrier diodes                      (2) PIN diodes  
(3) Step-recovery diodes                      (4) Tunnel diodes

66. Which symbol is correct for an LED ?

- (1)                       (2)                       (3)                       (4) 

67. The normal operating region for a zener diode is the \_\_\_\_\_

- (1) Forward-bias region                      (2) Reverse-bias region  
(3) Zero-crossing region                      (4) Reverse-breakdown region

68. A tunnel diode is used

- (1) In high-power circuit                      (2) In circuits requiring negative resistance  
(3) In very fast-switching circuits                      (4) In power supply rectifiers

69. A heterodyne frequency changer is called a
- (1) Modulator (2) Frequency Translator  
(3) Mixer (4) Demodulator
- 
70. Which of the following cannot be used to demodulate SSB?
- (1) Complete phase-shift generator  
(2) Product detector  
(3) Diode balance modulator  
(4) Bipolar transistor balanced modulator
- 
71. In a common system, noise is most likely to affect the signal
- (1) at the transmitter (2) in the channel  
(3) in the information source (4) at the destination
- 
72. Padders are used in a receiver to
- (1) Facilitate tracking (2) Filter the input signal  
(3) Suppress Noise (4) Discard the carrier
- 
73. Noise generated in a resistor is referred to as
- (1) Partition Noise (2) White Noise  
(3) Thermal Noise (4) Shot Noise
- 
74. Which one of the following is not a useful quantity for comparing the noise performance of receivers?
- (1) Noise figure (2) Noise temperature  
(3) Input noise voltage (4) Equivalent noise resistance
- 
75. In FM, the frequency deviation is :
- (1) Constant  
(2) Zero  
(3) Proportional to modulating frequency  
(4) Proportional to amplitude of modulating signal
- 
76. The noise performance of wide band FM system?
- (1) Exhibits a threshold  
(2) Is independent of modulation index  
(3) Is generally poorer than that of an AM system  
(4) Is independent of SNR
- 
77. Power ratio of one decibel
- (1) 1.26 : 1 (2) 2 : 1 (3) 5 : 1 (4) 10 : 1

78. The maximum possible value of entropy of a binary source is equal to
- (1) 0                      (2) 1                      (3)  $\sqrt{3}$                       (4)  $\frac{1}{\sqrt{2}}$
- 
79. Pick odd one out :
- (1) Cosmic Noise                      (2) Galactic Noise  
(3) Atmospheric Noise                      (4) Polar Noise
- 
80. One of the following types of noise becomes of great importance at high frequencies. It is the
- (1) Shot Noise                      (2) Random Noise  
(3) Impulse Noise                      (4) Transit-time Noise
- 
81. The baud rate
- (1) is always equal to the bit transfer rate  
(2) is equal to twice the bandwidth of an ideal channel  
(3) is not equal to the signaling rate  
(4) is equal to one half the bandwidth of an ideal channel
- 
82. The RS-232 interface
- (1) Interconnects data sets and transmission circuit  
(2) Interconnects data sets only  
(3) Type of parallel communication  
(4) Uses several different connectors
- 
83. Indicate which of the following signals is not transmitted in color TV :
- (1) Y                      (2) Q                      (3) R                      (4) I
- 
84. Another name for the horizontal retrace in a TV receiver is the
- (1) Ringing                      (2) Burst                      (3) Damper                      (4) Flyback
- 
85. Equalizing pulses in TV are set during
- (1) horizontal blanking                      (2) vertical blanking  
(3) the serrations                      (4) the horizontal retrace
- 
86. The Modulation Index of an FM signal varies
- (1) Linearly with frequency deviation  
(2) Linearly with baseband signal frequency  
(3) Inversely with frequency deviation  
(4) Independent of baseband signal frequency

87. Which of the following is the indirect way of FM generation?  
(1) Reactance bipolar transistor modulator  
(2) Reactance FM modulator  
(3) Varactor diode modulator  
(4) Armstrong modulator
- 
88. In a trapezoidal display of modulation, the ratio of long side to short side is 0.65. The modulation percent is  
(1) 21                      (2) 31                      (3) 42                      (4) 64
- 
89. The efficiency of AM for modulation index  $m = 0.8$  is  
(1) 0.24                      (2) 0.32                      (3) 0.48                      (4) 0.60
- 
90. In radio receiver, the maximum contribution to noise is from  
(1) mixer stage                      (2) power supply  
(3) power amplifier                      (4) filter
- 
91. In Electronic Switching Centre, the transmission rate of X.25 protocol is \_\_\_\_\_ 9.6 kbps.  
(1) less than                      (2) equal to  
(3) greater than                      (4) less than or equal to
- 
92. Which among the following represents the flawless hand-off with no perceivable interruption of service?  
(1) Hard hand-off                      (2) Soft Hand-off  
(3) Intracell hand-off                      (4) Intercell Hand-off
- 
93. If more number of cells are necessary in the frequency reuse distance, then the segmentation & dualization techniques get  
(1) united                      (2) divided                      (3) restricted                      (4) filtered
- 
94. The transfer of user messages from node to another by means of store and forward switching network is known as \_\_\_\_\_.  
(1) Jitter                      (2) Scalling                      (3) Hop                      (4) Entity
- 
95. If the desired connection has a low completion probability which type of flow control technique is used for eliminating the capture of common resources?  
(1) Trunk Directionalization                      (2) Code blocking  
(3) Centralized connection control                      (4) Cancellation of alternate routing

96. Phase Jitter is generated by an additive noise on a \_\_\_\_\_ sinusoidal wave.  
(1) Continuous      (2) Sampled      (3) Discrete      (4) Distorted
- 
97. Which kind of switching system does not comprise any subscriber, concentrator or expander?  
(1) Cross bar      (2) Director Exchange  
(3) Strowger      (4) Tandem
- 
98. If the queuing system are connected in tandem configuration, what would be the nature of delay?  
(1) Commulative      (2) Distributive      (3) Cumulative      (4) Deductive
- 
99. Which type of switching network involves the establishment of a dedicated path between two stations.  
(1) Message Switching      (2) Packet Switching  
(3) Circuit Switching      (4) Manual Switching
- 
100. In graded groups, switches with inaccessibility to the outgoing route gets \_\_\_\_\_ into the numbers of separate groups.  
(1) Added      (2) Substracted      (3) Divided      (4) Multiplied
- 
101. Which shape of switches are not adopted normally due to non-usability of both way trunks?  
(1) Circular      (2) Triangular      (3) Hexagonal      (4) Square
- 
102. How is the relation between Erlang and CCS specified?  
(1) 1 Erlang = 36 CCS      (2) 1 Erlang = 72 CCS  
(3) 1 Erlang = 18 CCS      (4) 1 Erlang = 96 CCS
- 
103. If 'n' number of users are present in a network with point-to-point links, then the number of links required in the network is  
(1)  $n(n-1)$       (2)  $n(n-1)/2$       (3)  $n(n+1)$       (4)  $n(n+1)/2$
- 
104. A local telephone network is an example of a \_\_\_\_\_ network  
(1) Packet switched      (2) Message -switched  
(3) Circuit switched      (4) Packet & message switched
- 
105. Data from a computer are \_\_\_\_\_ signal & looplocal handles \_\_\_\_\_ signal  
(1) analog & analog      (2) digital & digital  
(3) analog & digital      (4) digital & analog

106. The largest portion of the bandwidth for ADSL carries \_\_\_\_\_ .  
(1) Up stream data (2) Down stream data  
(3) Control data (4) Voice communication
- 
107. The two most common digital services are \_\_\_\_\_ service and \_\_\_\_\_ .  
(1) Switched/56; DDS (2) Switched/56; Switched/64  
(3) DDS; Switched 64 (4) Leased ; out-of-band
- 
108. The simplest type of switching fabric is the \_\_\_\_\_ switch  
(1) Cross bar (2) Cross point (3) TSI (4) STS
- 
109. Circuit switching takes place at the \_\_\_\_\_ layer.  
(1) Physical (2) Dataline (3) Network (4) Transport
- 
110. In a banyan switch, for 8 inputs and 8 outputs, we have \_\_\_\_\_ stages.  
(1) 1 (2) 2 (3) 3 (4) 4
- 
111. In a three-stage space division switch, if  $N = 200$ , the number of crosspoints is \_\_\_\_\_.  
(1) 40,000 (2) less than 40,000  
(3) greater than 40,000 (4) greater than 1,00,000
- 
112. In \_\_\_\_\_ switching, the paths in the circuit are separated from one another spatially.  
(1) time-division (2) two-dimensional  
(3) space-division (4) three-dimensional
- 
113. Packet-switched networks can also be divided into \_\_\_\_\_ subcategories virtual-circuit networks and datagram networks.  
(1) Five (2) Three (3) Two (4) Four
- 
114. The inner core of an optical fiber is \_\_\_\_\_ in composition.  
(1) copper (2) glass or plastic  
(3) bimetallic (4) liquid
- 
115. The word \_\_\_\_\_ refers to the portion of a \_\_\_\_\_ that carries a transmission.  
(1) line ; channel (2) channel ; link  
(3) link ; channel (4) line ; link
- 
116. If volt (y) – ampere (x) characteristic of a resistor is linear making an angle  $45^\circ$  with x-axis, then the value of resistance in ohms is  
(1)  $\sqrt{2}$  (2)  $1/\sqrt{2}$  (3) 1.0 (4) 0.5

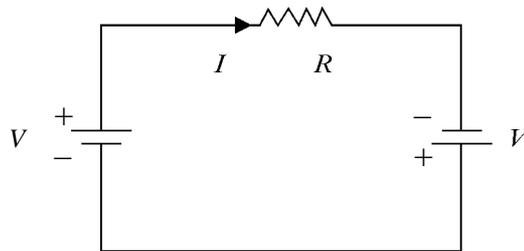
117. If length of a conductor is doubled without changing its diameter, then its resistance will be  
(1) doubled (2) halved  
(3) remain constant (4) increased to four times
- 
118. Choose a correct combination of good conductor and semi-conductor from the following.  
(1) glass & germanium (2) silicon & mica  
(3) silicon & aluminium (4) copper & silicon
- 
119. Two resistances  $R_1$  and  $R_2$  (where  $R_1 < R_2$ ) are connected in parallel. The equivalent value of resistance is \_\_\_\_\_  
(1)  $(R_1 + R_2)/R_1 R_2$  (2) less than  $R_1$   
(3)  $1/(R_1 + R_2)$  (4) more than  $R_2$
- 
120. A 24 V battery has an internal impedance of  $1 \Omega$  and a load resistance of  $5 \Omega$  is connected across the battery. The load voltage is \_\_\_\_\_  
(1) 20 V (2) 24 V (3) 18 V (4) 4 V
- 
121. At a particular node of a circuit, the currents entering are  $I_1$  &  $I_3$  and the currents leaving are  $I_2$  &  $I_4$ . Then according to Kirchoff's current law  
(1)  $I_1 + I_2 = I_3 + I_4$  (2)  $I_1 - I_2 = I_3 + I_4$   
(3)  $I_1 - I_4 = I_2 - I_3$  (4)  $I_1 + I_3 = I_2 - I_4$
- 
122. The temperature coefficient of resistance of a wire wound resistor is \_\_\_\_\_  
(1) very high (2) nearly zero  
(3) exactly zero (4) negative
- 
123. A potentiometer is essentially used for \_\_\_\_\_  
(1) current division only (2) voltage division only  
(3) both current and voltage division (4) increasing the resistance
- 
124. Two resistors of  $10 \Omega$  and  $15 \Omega$  are connected in parallel. If they are connected across a dc voltage source, the ratio of voltage drop across  $10 \Omega$  and  $15 \Omega$  resistors is \_\_\_\_\_  
(1) 1.0 (2) 2/3  
(3) 3/2 (4) 0
- 
125. Choose the correct equation of Ohm's law.  
(1)  $VI = R$  (2)  $VI = 1/R$   
(3)  $\frac{1}{R} = \frac{V}{1}$  (4)  $\frac{1}{R} = \frac{I}{V}$

126. Thermistors having \_\_\_\_\_ temperature coefficient are basically used for \_\_\_\_\_ protection.
- (1) zero ..... over current                      (2) negative ..... over current  
 (3) negative ..... over voltage                      (4) positive ..... over voltage

127. Choose a wrong statement from the following.
- (1) Current in good conductor is due to electrons only  
 (2) Porcelain is a good conductor of current  
 (3) Current in semi conductor is due to electrons and holes  
 (4) Current in insulator is always zero

128. For logarithmic taper, potentiometers are marked with
- (1) 'A' or 'B'                      (2) 'B' only                      (3) 'A' or 'C'                      (4) 'F' only

129. In the following dc circuit, the current ' $I$ ' flowing in the resistor ' $R$ ' is



- (1)  $I = V/R$                       (2)  $I = -2V/R$                       (3)  $I = 2V/R$                       (4)  $I = 0$

130. Ten 1.5 V cells, each having an internal resistance of  $0.2 \Omega$ , are connected in series with a load of  $58 \Omega$ . Then the current flowing in the circuit is
- (1)  $15/58$  A                      (2)  $1/4$  A                      (3)  $17/58$  A                      (4) 25 mA

131. If a current of 6 A flows for one minute, what is the charge transferred in coulombs?
- (1) 360 C                      (2) 3600 C                      (3) 60 C                      (4) 6 C

132. The resistivity of a material is  $10^{10} \Omega\text{m}$ . Then the material is a \_\_\_\_\_
- (1) very good conductor                      (2) conductor  
 (3) semi-conductor                      (4) good insulator

133. Two  $2 \Omega$  resistors in parallel are connected in series with two  $2 \Omega$  resistors. The equivalent resistance of the combination is \_\_\_\_\_
- (1)  $3 \Omega$                       (2)  $4 \Omega$                       (3)  $5 \Omega$                       (4)  $6 \Omega$

134. If  $V$  is the voltage applied across a resistor of  $R$  ohms and  $I$  is the current flowing through this resistor. Then the power  $P$  absorbed by the resistor  $R$  is \_\_\_\_\_
- (1)  $P = I^2 / R$                       (2)  $P = V^2 R$                       (3)  $P = VI / R$                       (4)  $P = V^2 / R$

135. In an analog meter, air-friction relates to  
(1) deflection torque only (2) controlling torque only  
(3) damping torque only (4) both deflecting & controlling torques
- 
136. In a PMMC type ammeter, only \_\_\_\_\_ can be measured.  
(1) dc current (2) ac current of 50 Hz  
(3) ac current of very low frequency (4) ac current of very high frequency
- 
137. Using Moving iron type voltmeter, only \_\_\_\_\_ can be measured.  
(1) peak value of ac voltage (2) rms value of ac voltage  
(3) peak to peak value of ac voltage (4) dc voltage
- 
138. Which of the following meters do not consume power for measurement of unknown quantity?  
(1) Ammeter (2) Voltmeter (3) Wattmeter (4) Ohmmeter
- 
139. Using Universal meter \_\_\_\_\_ can be measured  
(1) current and voltage only (2) current, voltage and power  
(3) current, voltage and frequency (4) current, voltage and resistance
- 
140. VTVM stands for  
(1) Voltage Tube Vacuum Meter (2) Voltage Test Vacuum Meter  
(3) Vacuum Tube Volt Meter (4) Vacuum Test Volt Meter
- 
141. The scale of Megger is marked from  
(1) 0 to 100 k $\Omega$  (2) 0 to 1000 k $\Omega$  (3) 0 to 10 M $\Omega$  (4) 0 to  $\infty$
- 
142. The time-period of a 50 Hz. ac voltage waveform is  
(1) 20 ms (2) 10 ms (3) 50 ms (4) 1 s
- 
143. A Megger is used for  
(1) Continuity test only  
(2) Continuity test & Insulation test with respect to earth only  
(3) Insulation test with respect to earth & Insulation resistance between conductors only  
(4) Insulation test with respect to earth, Continuity test and Insulation resistance between conductors
- 
144. The peak to peak voltage of a sine wave is 140 V. Its approximate rms value is \_\_\_\_\_  
(1) 100 V (2) 50 V (3) 70 V (4) 140 V

145. Whenever a conductor moves \_\_\_\_\_ with magnetic lines of force \_\_\_\_\_ is induced in the conductor

- |                                 |                            |
|---------------------------------|----------------------------|
| (1) Perpendicular,..... current | (2) Parallel ..... current |
| (3) Perpendicular, ..... emf    | (4) Parallel..... emf      |

146. A moving iron Ammeter indicates the \_\_\_\_\_ of current

- |                         |                |
|-------------------------|----------------|
| (1) Average value       | (2) Peak value |
| (3) Instantaneous value | (4) RMS value  |

147. Choose the correct statement from the following.

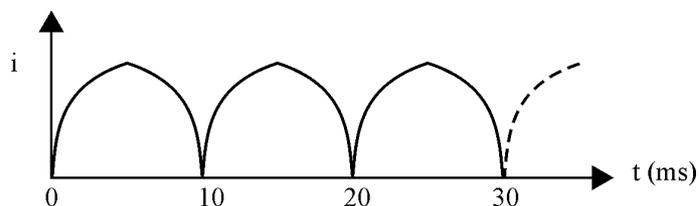
- (1) Mechanical energy is converted into electrical energy through magnetic energy
- (2) Mechanical energy is converted into magnetic energy through electrical energy
- (3) Electrical energy is converted into magnetic energy through mechanical energy
- (4) Magnetic energy is converted into mechanical energy through electrical energy

148. The rate of change of current in a coil of inductance 100 mH is 5A/sec. The absolute value of induced emf is

- |            |           |          |           |
|------------|-----------|----------|-----------|
| (1) 500 mV | (2) 20 mV | (3) 50 V | (4) 500 V |
|------------|-----------|----------|-----------|

149. What is the frequency of the following current waveform?

- (1) 10 Hz
- (2) 50 Hz
- (3) 33.3 Hz
- (4) 100 Hz



150. In a 100 V, 50 Hz single-phase ac circuit, the current flowing is 10 A and the angle between supply voltage and current phasors is  $60^\circ$ , then the power consumed is

- |            |           |
|------------|-----------|
| (1) 867 W  | (2) 707 W |
| (3) 1000 W | (4) 500 W |

151. A sine wave current has a peak value of 20 A. Its average value over full cycle is

- |              |       |              |                   |
|--------------|-------|--------------|-------------------|
| (1) $20/\pi$ | (2) 0 | (3) $10/\pi$ | (4) $20/\sqrt{2}$ |
|--------------|-------|--------------|-------------------|

152. If  $V_{rms}$  is rms value of a sine wave, then the average voltage is

- |                              |                             |
|------------------------------|-----------------------------|
| (1) $2\sqrt{2}V_{rms} / \pi$ | (2) $V_{rms} / \pi$         |
| (3) $\sqrt{2}V_{rms} / \pi$  | (4) $\sqrt{\pi}V_{rms} / 2$ |

153. In Fleming right hand rule, thumb indicates the direction of  
(1) induced emf (2) magnetic lines from N pole to S pole  
(3) motion of the conductor (4) magnetic lines from S pole to N pole
- 
154. The flux in magnetic circuit is analogous to \_\_\_\_\_ in electric circuit.  
(1) mmf (2) resistance (3) power (4) current
- 
155. Lenz's law is useful to determine the  
(1) value of induced emf (2) direction of induced emf  
(3) direction of magnetic lines (4) direction of motion of conductors
- 
156. A 6-pole ac generator runs at 3000 rpm. What is the frequency of output voltage?  
(1) 150 Hz (2) 50 Hz (3) 100 Hz (4) 60 Hz
- 
157. The equation of a current is given by:  $i = 10\sin(440 t)$  A. What is its frequency?  
(1) 50 Hz (2) 60 Hz (3) 70 Hz (4) 140 Hz
- 
158. Form factor is defined as  
(1) Average value / RMS value (2) Maximum value / RMS value  
(3) Maximum value / Average value (4) RMS value / Average value
- 
159. In electrical measurements 'PMMC' stands for  
(1) Power Magnet Main Coil (2) Power Magnet Moving Coil  
(3) Permanent Magnet Main Current (4) Permanent Magnet Moving Coil
- 
160. Current flowing through a  $10\Omega$  resistor is given by  $i = 10\sin(440 t)$  A. The power consumed by the resistor is:  
(1) 100 W (2) 500 W (3) 1000 W (4) 250 W
- 
161. Maximum value of a sine wave  $v = V_m \sin \omega t$  occurs at  
(1)  $\omega t = 0^\circ$  (2)  $\omega t = 90^\circ$  (3)  $\omega t = 180^\circ$  (4)  $\omega t = 45^\circ$
- 
162. Power factor of a resistive circuit is always  
(1) unity (2) zero (3) lagging (4) leading
- 
163. Fleming left hand rule is applicable to  
(1) ac and dc motors (2) ac and dc generators  
(3) ac motors only (4) dc generators only

164. When a Vibrator is used from a battery source a \_\_\_\_\_ output is obtained.

- (1) zero (2) sine wave  
(3) square wave (4) constant dc
- 

165. A Vibrator is basically

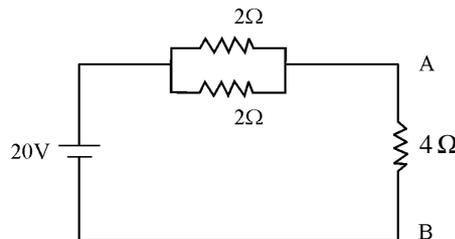
- (1) a mechanical device (2) an electro-magnetic device  
(3) a magnetic device (4) an electro-mechanical device
- 

166. Resistance of carbon \_\_\_\_\_ with increase in temperature, the resistance of copper \_\_\_\_\_ with increase in temperature

- (1) increases ..... decreases (2) decreases ..... increases  
(3) increases ..... remain constant (4) decreases ..... remain constant
- 

167. Find the voltage across the terminals A and B of the following circuit.

- (1) 16 V  
(2) 4 V  
(3) 20 V  
(4) 5 V



168. Two inductances of 3 mH and 6 mH are connected in series. The equivalent inductance is \_\_\_\_\_

- (1) 3 mH (2) 6 mH (3) 9 mH (4) 2 mH
- 

169. A dc current of 2 A is passed through an inductance of 2 H for 2 sec. The induced emf is

- (1) 2 V (2) -2 V (3) 4 V (4) 0 V
- 

170. A small ac generator of 100 V (rms) is connected to a resistive load of 1 kW. The values of resistance and current are

- (1) 1  $\Omega$  and 10 A respectively (2) 10  $\Omega$  and 10 A respectively  
(3) 10  $\Omega$  and 1 A respectively (4) 1  $\Omega$  and 1 A respectively
- 

171. Which of the following codes uses 7-bits to represent a character?

- (1) ASCII (2) BCD (3) EBCDIC (4) GRAY
- 

172. Any Boolean expression can be implemented by using

- (1) NAND gates only (2) NOR gates only  
(3) Both NAND and NOR gates (4) OR gates only

173. The decimal equivalent of the binary number 10110 is  
(1) 20                      (2) 22                      (3) 18                      (4) 14
- 
174. A flip-flop is used to store \_\_\_\_\_  
(1) one-bit of information                      (2) two-bits of information  
(3) one-nibble of information                      (4) one-byte of information
- 
175. Which of the following memories must be refreshed many times per second?  
(1) SRAM                      (2) DRAM  
(3) EPROM                      (4) ROM
- 
176. Operating system is also known as \_\_\_\_\_  
(1) Database                      (2) System Software  
(3) Hardware                      (4) Printer
- 
177. Which command is used in DOS, to display the list of all the file of the disk?  
(1) DIR                      (2) COPY  
(3) DIR FILE                      (4) LIST
- 
178. The language that computer can understand and execute is called as \_\_\_\_\_  
(1) Machine Language                      (2) Application Software  
(3) Assembly Language                      (4) C-Language
- 
179. What is the access method used is magnetic tapes?  
(1) Random access                      (2) Direct access  
(3) Sequential access                      (4) None of the above
- 
180. Which menu is used in MS-Word to change character size?  
(1) View                      (2) Tools  
(3) Format                      (4) Data
- 
181. As per the symbolic notation of DOS, which of the following indicates the ROOT directory?  
(1) \*                      (2) >                      (3) /                      (4) <
- 
182. What is the extention used in DOS for batch files?  
(1) .BAT                      (2) .DOC  
(3) .PRG                      (4) .DOS

183. In DOS, which of the following keys will bypass the conFIG.SYS and AUTOEXEC.BAT files?

- (1) F8 (2) F5  
(3) F4 (4) F1
- 

184. How many layers are there in OSI reference model?

- (1) 4 (2) 6 (3) 7 (4) 3
- 

185. Who was the founder of Bluetooth technology?

- (1) Ericson (2) Martin Cooper  
(3) Steve Jobs (4) Apple
- 

186. Which is the most common language used in web designing?

- (1) C (2) C++  
(3) PHP (4) HTML
- 

187. Who is referred to as Father of Computer?

- (1) Vint Cerf (2) Tim Berner Lee  
(3) Charles Babbage (4) Steve Jobs
- 

188. Which of the following is called as secondary storage device?

- (1) Hard disk (2) RAM  
(3) ROM (4) CD-ROM
- 

189. In MS-Excel, which formula is used to add two cells (A1 and A2):

- (1) A1 plus A2 (2) =A1 + A2  
(3) =Add (A1+A2) (4) = together (A1;A2)
- 

190. Which of the following is not one of the powerpoint views?

- (1) Slide show view (2) Slide view  
(3) Presentation view (4) Outline view
- 

191. Which option can be used to set custom timings for slides in a presentation?

- (1) Slider Timings (2) Rehearsal  
(3) Slide timer (4) Slide show setup
- 

192. Which key can be used to view slide show?

- (1) F5 (2) F2 (3) F1 (4) F9

193. A file which contains readymade styles that can be used for a presentation is called as \_\_\_\_\_ ?

- (1) Auto style (2) Wizard  
(3) Templete (4) Fromatting
- 

194. What is the maximum zoom percentage in MS-Power Point?

- (1) 100% (2) 200%  
(3) 300% (4) 400%
- 

195. Which function key is used to find spell check in MS-word?

- (1) F1 (2) F9  
(3) F6 (4) F7
- 

196. How many maximum number of columns can be inserted in the word document?

- (1) 45 (2) 50  
(3) 55 (4) 65
- 

197. Laser printer is an example of which device?

- (1) Input device (2) Output device  
(3) Memory device (4) None of the above
- 

198. Which of the following is used to create spread sheets?

- (1) MS-word (2) MS-power point  
(3) MS-Excel (4) All of the above
- 

199. RAM stands for \_\_\_\_\_

- (1) Random - Access memory (2) Read - And - Memory  
(3) Random - And - Memory (4) Read - Access - Memory
- 

200. Which of the following is the extension of word files?

- (1) xls (2) doc  
(3) ppt (4) dcw

**PCC-2**

**Booklet Code** **A**

**SPACE FOR ROUGH WORK**

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