PART – A

1. Shirin went to a bakery and bought items worth Rs. 25, out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items ?
   A) Rs. 12 B) Rs. 19.70
   C) Rs. 19.10 D) Rs. 18.80

2. The rate of simple interest on a sum of money is 6 per cent per annum for the first 3 years, 8 per cent per annum for the next 5 years and 10 per cent per annum for the period beyond 8 years. If the simple interest accrued by the sum for a total period of 10 years is Rs. 1,560, what is the sum ?
   A) Rs. 1,500
   B) Rs. 3,000
   C) Rs. 2,000
   D) Data Inadequate

3. Adrian starts a start-up with a capital of Rs. 85,000. Brian joins in the start-up with Rs. 42,500 after sometime. For how much period does Brian join, if the profits at the end of the year are divided in the ratio of 3 : 1 ?
   A) 5 months B) 6 months
   C) 7 months D) 8 months

4. A car travels at an average of 50 miles per hour for 2.5 hours and then travels at a speed of 70 miles per hour for 1.5 hours. How far did the car travel in the entire 4 hours ?
   A) 210 miles
   B) 230 miles
   C) 250 miles
   D) 260 miles

5. Line AB is 24 metres in length and is tangent to the inner one of the two concentric circles at point C. Points A and B lie on the circumference of the outer circle. It is known that the radii of the two circles are integers. The radius of the outer circle is
   A) 13 m B) 5 m
   C) 7 m D) 4 m

Direction for Questions 6 – 10 : From the four choices provided, choose the analogy that is most similar to the one in the question.

6. Wealth : Poverty
   A) part : whole
   B) good : excellent
   C) prodigal : chary
   D) wicked : sinful

7. Misfortune : Catastrophe
   A) miniature : big
   B) limited : infinite
   C) knowledge : learning
   D) generosity : parsimony

8. Molecule : Atoms
   A) family : sisters B) light : bulb
   C) tissue : cells D) body : limb

9. Limp : Walk
   A) flap : fly B) run : race
   C) stutter : talk D) chew : digest

10. Riddle : Solve
    A) mirage : illusion B) joke : amuse
    C) tangle : unravel D) target : aim

SPACE FOR ROUGH WORK

SEAL

11. Find the missing term :
60, 40, 55, 45, 50, 50, ?
A) 45 B) 50
C) 55 D) 60

12. Find the missing alphabet :
T, r, O, m, J, ?
A) h B) i
C) l D) g

13. Here are some words translated from an artificial language.
qmelaqali means fruitcake
qalitiimmeo means cakewalk
useguamao means buttercup
Which word could mean "cupcake" ?
A) qalitiiqali B) amaotiimmeo
C) pakitreft D) amaoqali

14. Fact 1 : All chickens are birds.
Fact 2 : Some chickens are hens.
Fact 3 : Female birds lay eggs.
If the first three statements are facts, which of the following statements must also be a fact ?
I. All birds lay eggs.
II. Hens are birds.
III. Some chickens are not hens.
A) II only
B) II and III only
C) I, II, and III
D) None of the statements is a known fact

15. What is the most essential thing for election ?
A) President B) Voter
C) November D) Nation

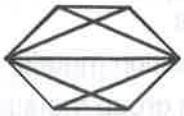
16. There are five janitors. Pali, Qureshi, Rohan, Sant and Timber. They all have a different height, Qureshi is shorter than only Timber and Sant is shorter than Pali and Qureshi. Who among them is the shortest ?
A) Rohan
B) Sant
C) Pali
D) Data inadequate

17. A $ B means A is the father of B; A # B means A is the sister of B; A * B means A is the daughter of B and A @ B means A is the brother of B. Which of the following indicates that M is the wife of Q ?
A) Q $ R # T @ M
B) Q $ R @ T # M
C) Q $ R * T # M
D) Q $ R @ T * M

18. Count the number of squares in the given figure.

A) 32 B) 30
C) 29 D) 28

19. Find the number of quadrilaterals in the given figure.



A) 6 B) 7
C) 9 D) 11

SPACE FOR ROUGH WORK

20. Who was the Viceroy of India, when Quit India Resolution was passed in 1942 ?
A) Lord Linlithgow
B) Lord Wavell
C) Lord Willingdon
D) Lord Mountbatten

21. When was the East India Association set up ?
A) 1866 B) 1857
C) 1836 D) 1885

22. Who was the Spanish navigator who set out to discover India, but instead landed on the soil of America?
A) Christopher Columbus
B) Vasco Da Gama
C) James Cook
D) None of Above

23. Which dynasty was ruling over north India when Alexander the great invaded India ?
A) Gupta Dynasty B) Maurya Dynasty
C) Sakya Dynasty D) Nanda Dynasty

24. The roads of cities in the Indus Valley Civilization generally divided the city into
A) Rectangular Blocks
B) Circular Blocks
C) Triangular Blocks
D) None of Above

25. The group of metals Co, Ni, Fe may best called as
A) Transition metals
B) Main group metals
C) Alkali metals
D) Rare metals

26. Non stick cooking utensils are coated with
A) Black paint B) PVC
C) Teflon D) Polystyrene

27. The international township built near Pondicherry in India in coloration with UNESCO is called
A) Elbaville B) Auroville
C) Gayaville D) Broadway

28. The famous Dilwara Temples are situated in
A) Uttar Pradesh B) Rajasthan
C) Maharashtra D) Madhya Pradesh

29. 'Kanchipuram' is in which of the following States ?
A) Andhra Pradesh B) Orissa
C) Kerala D) Tamil Nadu

30. Which of the following is not a chief orgar of the United Nations Organisations ?
A) International Labour Organisation
B) Security Council
C) International Court of Justice
D) General Assembly

31. Which of the following is not a member G-15 ?
A) Indonesia B) Malaysia
C) Columbia D) India

32. Irvin sold a book at a profit of 12%. If Irv had sold it for Rs. 18 more, then 18% wou have been gained. Find the cost price.
A) Rs. 600 B) Rs. 300
C) Rs. 400 D) Rs. 200

SEAL

SPACE FOR ROUGH WORK

33. In a group of 7 people, the average age is found to be 17 years. Two more people joined with an average age 19 years. One person left the group whose age was 25 years. What is the new average age of the group ?

A) 17.5 years B) 16.5 years
C) 18 years D) 16 years

34. A 300 metre long metro train crosses a platform in a metro station in 39 seconds while it crosses a lamp post in 18 seconds. What is the length of the platform ?

A) 250 metre B) 350 metre
C) 520 metre D) 300 metre

35. Assume that a sum of money is divided equally among n girls. Each girl will receive $ 60. If another girl is added to the group and the sum is divided equally among all the girls, each child girl a $ 50 share. What is the sum of money ?

A) $ 3000 B) $ 300
C) $ 110 D) $ 10

36. A tank can be filled by one tap in 10 minutes and by another in 30 minutes. Both the taps are kept open for 5 minutes and then the first one is shut off. In how many minutes more is the tank completely filled ?

A) 5 B) 7.5
C) 10 D) 12

37. By selling 45 limes for Rs. 40, a woman loses 20%. How many should she sell for Rs. 24 to gain 20 % in the transaction ?

A) 16 B) 18
C) 20 D) 22

38. The difference between the compound interest and the simple interest earned at the end of 3rd year on a sum of money at a rate of 10% per annum is Rs. 77.5. What is the sum ?

A) Rs. 3,500
B) Rs. 2,500
C) Rs. 3,000
D) Rs. 2,000

39. Aamir and Birju can cut 5000 g of wood in 20 min. Birju and Charles can cut 5000 g of wood in 40 min. Charles and Aamir cut 5 kg of wood in 30 min. How much time Charles will take to cut 5 kg wood alone ?

A) 120 min.
B) 48 min.
C) 240 min.
D) 120/7 min.

40. An alloy contains copper and zinc in the ratio 5 : 3 and another contains copper and tin in the ratio 8 : 5. If equal weights of the two are melted together to form a 3rd alloy, find the weight of tin per kg in the new alloy.

A) 40/129
B) 5/13
C) 5/26
D) 28/5

41. x is a whole number. If the only common factors of x and x2 are 1 and x, then x is

A) 1
B) a perfect square
C) an odd number
D) a prime number

SPACE FOR ROUGH WORK

42. Monisha is working with a real estate agent to find a location for the kids' toy store she plans to open in her town. She is looking for a place that is either in the centre or not too far from the centre of town. It should also be attractive for the right kind of footfall too. Which of the following locations should Monisha's agent call to her attention ?

A) a storefront in a new high-rise building near the train station in the center of town whose occupants are mainly young, childless professionals who use the train to commute to their offices each day

B) a little shop three blocks away from the town's main street, located across the street from an elementary school and next door to an icecream store

C) a stand-alone storefront on a quiet residential street ten blocks away from the town's center

D) a storefront in a small strip mall located on the outskirts of town that is also occupied by a pharmacy and a dry cleaner

43. Reading is a psycholinguistic guessing game. To read critically is a skill as it is a demanding process. One must slow down one's reading and, with a pencil in hand, perform specific operations on the text. Mark up the text with reactions, conclusions and questions. When one reads, one becomes an active participant. This paragraph best supports the statement that

A) critical reading is a slow, dull, but essential process

B) the best critical reading happens at critical times in a person's life

C) readers should get in the habit of questioning the truth of what they read

D) critical reading requires thoughtful and careful attention

44. What is the most essential thing for ovation ?

A) outburst B) bravo
C) applause D) encore

45. Introducing a man to her husband, a woman said, "His brother's father is the only son of my grandfather." How is the woman related to this man ?

A) Mother B) Aunt
C) Sister D) Daughter

46. Pointing to a photograph, a man said, "I have no brother or sister but that man's father is my father's son." Whose photograph was it ?

A) His Own B) His Son
C) His Father D) His Grandfather

47. A man walks 5 km toward south and then turns to the right. After walking 3 km he turns to the left and walks 5 km. Now in which direction is he from the starting place ?

A) West B) South
C) North-East D) South-West

48. If the consonants in the word 'DROVE' are first arranged alphabetically and the vowels are put in between two pairs of consonants in the alphabetical order, which of the following will be the fourth from the right end after the rearrangement ?

A) D B) E
C) R D) O

49. There is a queue in a ticketing office. Amanda is 10th from the front while Murthy is 25th from behind and Marta is just in the middle of the two. If there be 50 persons in the queue. What position does Marta occupy from the front ?

A) 16 B) 18
C) 15 D) 17

SPACE FOR ROUGH WORK

SEAL

50. Count the number of convex pentagons in the adjoining figure.

A) 16 B) 12
C) 8 D) 4

Read the information given below and then answer questions 51 – 54. There is a family of six people whose nick names are Pat, Qat, Rat, Sat, Tat and Uat. Their professions are Engineer, Doctor, Teacher, Salesman, Manager and Lawyer. There are two married couples in the family.
The Manager is the grandfather of Uat, who is an Engineer
Rat, the Salesman, is married to the lady Teacher
Qat is the mother of Uat and Tat.
The Doctor, Sat is married to the Manager.

51. How many male members are there in the family ?
A) Two B) Three
C) Four D) Data Inadequate

52. What is the profession of Pat ?
A) Lawyer
B) Lawyer or Teacher
C) Manager
D) None of these

53. Who are the two married couples in the family ?
A) Pat-Qat and Sat-Rat
B) Rat-Uat and Sat-Tat
C) Pat-Tat and Sat-Rat
D) Pat-Sat and Rat-Qat

54. How Pat is related to Tat ?
A) Father B) Grandfather
C) Mother D) Grandmother

55. In which year was Pulitzer Prize established ?
A) 1917 B) 1918
C) 1922 D) 1928

56. The prestigious Ramon Magsaysay Award was conferred upon Ms. Kiran Bedi for her excellent contribution to which of the following fields ?
A) Literature
B) Community Welfare
C) Government Service
D) Journalism

57. Who among the following is not a recipient of 'Dada Saheb Phalke' Award ?
A) Ramanand Sagar
B) Raj Kapoor
C) V. Shantaram
D) Ashok Kumar

58. What is part of a database that holds only one type of information ?
A) Report B) Field
C) Record D) File

59. '.JPG' extension refers usually to what kind of file ?
A) System file
B) Animation/movie file
C) MS Encarta document
D) Image file

60. Which of the following is not written by Munshi Premchand ?
A) Gaban B) Godan
C) Guide D) Manasorovar

SPACE FOR ROUGH WORK

PART – B

61. In MOSFET fabrication, the channel length is defined during the process of

A) Isolation oxide growth

B) Channel stop implantation

C) Poly-silicon gate patterning

D) Lithography step leading to the contact pad

62. Copper behaves as a

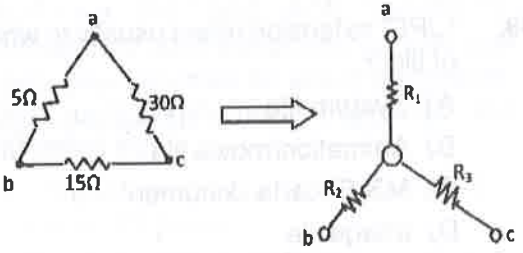
A) conductor always

B) conductor or dielectric depending on the applied electric strength

C) conductor or dielectric depending on the frequency

D) conductor or dielectric depending on electric current densit

63. A Delta-connected network with its Wye-equivalent is shown in Figure. The resistance R_1, R_2 and R_3 (in ohms) are respectively



A) 1.5, 3 and 9

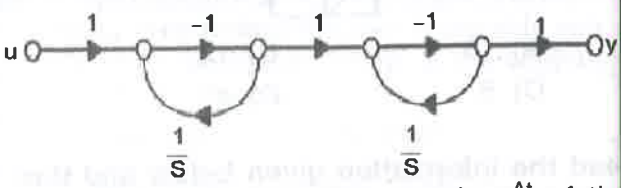
B) 3, 9 and 1.5

C) 9, 3 and 1.5

D) 3, 1.5 and 9

64. The state diagram of the below system is described by the state-variable equations :

$\dot{X} = AX + Bu$; $y = CX + Du$



The state transition matrix e^{At} of the system shown in the above figure is

A) $\begin{bmatrix} e^{-t} & 0 \\ te^{-t} & e^{-t} \end{bmatrix}$ B) $\begin{bmatrix} e^{-t} & 0 \\ -te^{-t} & e^{-t} \end{bmatrix}$

C) $\begin{bmatrix} e^{-t} & 0 \\ e^{-t} & e^{-t} \end{bmatrix}$ D) $\begin{bmatrix} e^{-t} & -te^{-1} \\ 0 & e^{-t} \end{bmatrix}$

65. Twelve 1 Ω resistances are used as edge to form a cube. The resistance between tw diagonally opposite corners of the cube is

A) $\frac{5}{6}\Omega$ B) $\frac{1}{6}\Omega$

C) $\frac{6}{5}\Omega$ D) $\frac{3}{2}\Omega$

66. A DC voltage source connected across series RLC circuit. Under stead conditions the applied DC voltage dro entirely across the

A) R only

B) L only

C) C only

D) R and L combination

67. In a series RLC high Q circuit ,the curre peaks at a frequency

A) Equal to the resonant frequency

B) Greater than the resonant frequency

C) Less than the resonant frequency

D) None

SPACE FOR ROUGH WORK

68. A 4 bit ripple counter and a 4 bit synchronous counter are made using flip-flops having a propagation delay of 10 ns each. If the worst case delay in the ripple counter and the synchronous counter be R and S respectively, then
A) R = 10 ns, S = 40 ns
B) R = 40 ns, S = 10 ns
C) R = 10 ns, S = 30 ns
D) R = 30 ns, S = 10 ns

69. The Boolean function A+BC is reduced form of
A) AB + BC B) (A + C)' . B
C) A'B + AB'C D) (A+B) (A+C)

70. The rank of the matrix
$$\begin{bmatrix} 1 & 1 & 1 \\ 1 & -1 & 0 \\ 1 & 1 & 1 \end{bmatrix}$$
A) 0 B) 1
C) 2 D) 3

71. For a periodic signal v (t) = 30sin100t + 10cos300t + 6 sin(500t + $\pi/4$), the fundamental frequency in rad/s
A) 100 B) 300
C) 500 D) None of these

72. A solution for the differential equation $x'(t)+2x(t)=\delta(t)$ with initial condition $x(\bar{0}) = 0$ is
A) $e^{-2t}u(t)$ B) $e^{2t}u(t)$
C) $e^{-t}u(t)$ D) $e^{t}u(t)$

73. Which of the following functions would have only odd powers of x in its Taylor series expansion about the point x = 0 ?
A) no real or complex solution
B) exactly two distinct complex solutions
C) a unique solution
D) an infinite number of complex solutions

74. Si is preferred over Ge because
A) Si is cheaper
B) Si band gap is large
C) Si technology is matured
D) All of the above

75. Which of the following Derichlets conditions are incorrect for convergence of Fourier transform of the function x(t) ?
1. x(t) is square integrable
2. x(t) must be periodic
3. x(t) should have finite number of maxima and minima within any finite interval
4. x(t) should have finite number of discontinuities within any finite interval
A) None B) 3 only
C) 2 only D) 1 only

76. For the discrete signal $x[n] = a^n u[n]$, a > 0 the z-transform is
A) $\frac{(z+a)}{z}$ B) $\frac{(z-a)}{z}$
C) $\frac{z}{(z-a)}$ D) $\frac{z}{(z+a)}$

77. A 200Ω resistor, a 150-mH inductor, and a 2-μF capacitor are in series. Find the total impedance in polar form at 400 Hz.
A) 200 + j178
B) 200 – j178
C) $268 \angle 41.7^\circ$
D) $268 \angle -41.7^\circ$

SPACE FOR ROUGH WORK

78. Events A and B are mutually exclusive and have nonzero probability. Which of the following statement(s) are true ?

A) $P(A \cup B)=P(A)+P(B)$

B) $P(B^c)>P(A)$

C) $P(A \cap B)=P(A)\ P(B)$

D) $P(B^c)<P(A)$

79. If the number of bits per sample in a PCM system is increased from a n to n+1, the improvement in signal to quantization nose ratio will be

A) 3 dB B) 6 dB

C) 2n dB D) n dB

80. A carrier AcCos(ωc)t is frequency modulated by a signal EmCos(ωm)t.The modulation index is mf. The expression for the resulting FM signal is

A) AcCos[ωct+mfSin(ωm)t]

B) AcCos[ωct+mfCos(ωm)t]

C) AcCos[ωct+ π mfSin ωmt]

D) AcCos[ωct+2 π mfEmCos(ωm)t/ωm]

81. The 'Pinch-off' voltage of a JFET is 5.0 volts,its 'Cut-off' voltage is

A) (0.5)^1/2 V B) 2.5 V

C) 5.0 V D) (5.0)^3/2 V

82. The threshold voltage of an n-channel MOSFET can be increased by

A) Increasing the channel dopant concentration

B) Reducing the channel dopant concentration

C) Reducing the GATE oxide thickness

D) Reducing the channel length

83. For a given line, attenuation constant $\alpha=\sqrt{RG}$ and $\beta=\omega\sqrt{LC}$. Such line is known as

A) Lossless line B) Distortionless line

C) Dispersive line D) All of the above

84. An 'Assembler' for a microprocessor is used for

A) Assembly of processors in a production line

B) Creation of new programmes using different modules

C) Translation of a program from assembly language to machine language

D) Translation of a higher level language into English text

85. When a CPU is interrupted, it

A) Stops execution of instructions

B) Acknowledges interrupt and branches to a subroutine

C) Acknowledge interrupt and continues

D) Acknowledge interrupt and waits for the next instruction from the interrupting device

86. The open-loop transfer function of feedback control system is

$G(s).H(s)=1/(s+1)^3$

The gain margin of the system is

A) 2

B) 4

C) 8

D) 16

SPACE FOR ROUGH WORK

SEAL

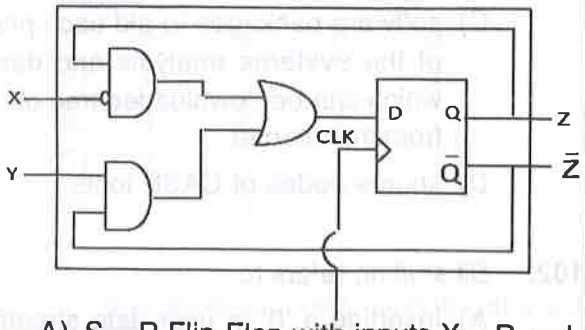
87. The configuration of Cascode amplifier is
A) CE-CE B) CE-CB
C) CC-CB D) CC-CC

88. α cutoff frequency of a bipolar junction transistor
A) increases with the increase in base width
B) increases with increase in emitter width
C) increases with increase in collector width
D) increases with decrease in base width

89. An ideal op-amp is an ideal
A) voltage controlled current source
B) voltage controlled voltage source
C) current controlled current source
D) current controlled voltage source

90. The logical expression $y = A + A'B$ is equivalent to
A) $y = AB$ B) $y = A$
C) $y = A^{-} + B$ D) $y = A + B$

91. A sequential circuit using D flip-flop and logic gates is shown in Figure, where X and Y are the inputs and Z is the output. The circuit is



A) S – R Flip-Flop with inputs X = R and Y = S
B) S – R Flip-Flop with inputs X = S and Y = R
C) J – K Flip-Flop with inputs X = J and Y = K
D) J – K Flip-Flop with inputs X = K and Y = J

92. The impulse response h[n] of a linear time-invariant system is given by $h[n] = u[n + 3] + u[n - 2] - 2u[n - 7]$ where u[n] is the unit step sequence. The above system is
A) stable but not causal
B) stable and causal
C) causal but unstable
D) unstable and not causal

93. The trigonometric Fourier series of a periodic time function can have only
A) Cosine terms
B) Sine terms
C) Cosine and sine terms
D) DC and cosine terms

94. The input x(t) and output y(t) of a system are related as $y(t) = \int x(\tau)\cos(3\tau)d\tau$. The system is
A) Time-invariant and stable
B) Stable and not time-invariant
C) Time-invariant and not stable
D) Not time-invariant and not stable

95. The final value theorem is used to find the
A) Steady state value of the system output
B) Initial value of the system output
C) Transient behavior of the system output
D) None of these

96. Which of the following statements is/are true ?
I. Combinational circuits may have feedback, sequential circuits do not.
II. Combinational circuits have a 'memory-less' property, sequential circuits do not.
III. Both combinational and sequential circuits must be controlled by an external clock.
A) I only B) II and III only
C) I and II only D) II only

SPACE FOR ROUGH WORK

PART – C

97. At 100% modulation, the power in each sideband is _____ of that of carrier.

A) 50%

B) 40%

C) 60%

D) 25%

98. The question is based on the following program fragment.

```
f (int Y[10], int x) {
int u, j, k;
i = 0; j = 9;
do {
        k = (i+j) / 2;
        if (Y[k] < x)      i = k;      else j = k;
} while ( (Y[k] != x) && (i< j) );
if (Y[k] == x)      printf ("x is in the array.");
else printf ("x is not in the array.");
}
```

On which of the following contents of 'Y' and 'x' does the program fail ?

A) Y is [1 2 3 4 5 6 7 8 9 10] and x < 10

B) Y is [1 3 5 7 9 11 13 15 17 19] and x < 1

C) Y is [2 2 2 2 2 2 2 2 2 2] and x > 2

D) Y is [2 4 6 8 10 12 14 16 18 20] and 2 < x < 20 and 'x' is even

99. Assume transaction A holds a shared lock R. If transaction B also requests for a shared lock on R. It will

A) result in deadlock situation

B) immediately be granted

C) immediately be rejected

D) be granted as soon as it is released by A

100. Given relations R(w, x) and S(y, z), the result of SELECT DISTINCT w, x from R, S

A) R has no duplicates and S is non-empty

B) R and S have no duplicates

C) S has no duplicates and R is non-empty

D) R and S has the same number of tuples

101. By open domain CASE tools we mean

A) tools available in open domain

B) software packages which can be downloaded from the internet

C) software packages to aid each phase of the systems analysis and design which can be downloaded free of cost from the internet

D) source codes of CASE tools

102. Bit stuffing refers to

A) Inserting a '0' in user data stream to differentiate it with a flag

B) Inserting a '0' in flag stream to avoid ambiguity

C) Appending a nibble to the flag sequence

D) Appending a nibble to the user data stream

SPACE FOR ROUGH WORK

103. A decimal has 25 digits. The number of bits needed for its equivalent binary representation is approximately.

A) 50

B) 74

C) 40

D) 60

104. Match List I with List-II and select the correct answer using the codes given below the Lists.

List – I	List – II
a. 0-address instruction	1. T = TOP(T-1)
b. 1-address instruction	2. Y = Y + X
c. 2-address instruction	3. Y = A – B
d. 3-address instruction	4. ACC = ACC – X

Codes :

	a	b	c	d
A)	1	2	3	4
B)	3	2	4	1
C)	2	3	1	4
D)	1	4	2	3

105. If the channel is band limited to 6 kHz and signal to noise ratio is 16, what would be the capacity of channel ?

A) 16.15 kbps

B) 23.24 kbps

C) 40.12 kbps

D) 24.74 kbps

106. An algorithm is made up of two modules M1 and M2. If order of M1 is f(n) and M2 is g(n) then the order of algorithm is

A) max (f(n), g(n))

B) min(f(n), g(n))

C) f(n) + g(n)

D) f(n) x g(n)

107. Which of the following definitions generates the same languages as L, where

$L = \{ x^n y^n, n >= 1 \}$

i. $E \rightarrow xEy \mid xy$

ii. $xy \mid x^+xyy^+$

iii. x^+y^+

A) (i) only

B) (i) and (ii) only

C) (ii) and (iii) only

D) (ii) only

108. The address sequence generated by tracing a particular program executing in a pure demand paging system with 100 records per page, with 1 free main memory frame is recorded as follows. What is the number of Page Faults ?

0100, 0200, 0430, 0499, 0510, 0530, 0560, 0120, 0220, 0240, 0260, 0320, 0370.

A) 15, 4

B) 6, 4

C) 7, 2

D) 4, 6

SPACE FOR ROUGH WORK

PART – D

109. Web links are stored within the page itself and when you wish to 'jump' to the page that is linked, we select the hotspot or anchor. This technique is called

A) Hypertext

B) Hypermedia

C) Both A) and B)

D) Anchoring

110. Which level of RAID refers to disk mirroring with block striping ?

A) RAID level 1

B) RAID level 2

C) RAID level 0

D) RAID level 3

111. Which of the following is not a form of main memory ?

A) Instruction cache

B) Instruction register

C) Instruction opcode

D) Translation look-aside buffer

112. The solution of the recurrence relation $a_r = a_{r-1} + 2a_{r-2}$ with $a_0 = 2$, $a_1 = 7$ is

A) $a_r=(3)^r + (1)^r$

B) $2a_r = (2)^r/3 - (1)^r$

C) $a_r= 3^{r+1} - (-1)^r$

D) $a_r = 3(2)^r - (-1)^r$

113. The following program fragment prints

```
int i = 5;
do { putchar(i+100); printf ("%d", i - - ;) }
while (i);
```

A) i5h4g3f2el

B) 14h3g2f1e0

C) An error message

D) None of the above

114. The running time of an algorithm $T(n)$, where 'n' is the input size, is given by

$T(n) = 8T(n/2) + qn$, if $n > 1$

$= p$, if $n = 1$

Where p, q are constants. The order of this algorithm is

A) n^2

B) n^n

C) n^3

D) n

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115. The convergence of the bisection method is

A) Cubic

B) Quadratic

C) Linear

D) None

116. In a ripple counter using edge-triggered JK flip-flops, the pulse input is applied to

A) Clock input of all flip-flops

B) J and K input of one flip-flop

C) J and K input of all flip-flops

D) Clock input of one flip-flop

117. What will be the output of following ?

```
main( )
{
        Static int a = 3;
        Printf("%d",a – –);
        If (a)
        main( );
}
```

A) 3

B) 3 2 1

C) 3 3 3

D) Program will fall in continuous loop and print 3

118. M is a square matrix of order 'n' and its determinant value is 5. If all the elements of M are multiplied by 2, its determinant value becomes 40. The value of 'n' is

A) 2

B) 3

C) 5

D) 4

119. When transaction Ti requests a data item currently held by Tj , Ti is allowed to wait only if it has a timestamp smaller than that of Tj (that is, Ti is older than Tj). Otherwise, Ti is rolled back (dies). This is

A) Wait-die

B) Wait-wound

C) Wound-wait

D) Wait

120. Which of the following is a desirable property of module ?

A) Independency

B) Low cohesiveness

C) High coupling

D) Multifunctional

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