|||||||||||||||||||||||||||||||||||||||||||||||||||||

PART – A
GENERAL APTITUDE

Choose the most appropriate option.

1. Look at this series : 2, 1, (1/2), (1/4), ...
   What number should come next ?
   A) (1/3)
   B) (1/8)
   C) (2/8)
   D) (1/16)

2. Which word does NOT belong with the others ?
   A) parsley
   B) basil
   C) dill
   D) mayonnaise

3. Odometer is to mileage as compass is to
   A) speed
   B) hiking
   C) needle
   D) direction

4. Applying for Seasonal Employment occurs when a person requests to be considered for a job that is dependent on a particular season or time of year. Which situation below is the best example of Applying for Seasonal Employment ?
   A) The ski instructors at Top of the Peak Ski School work from December through March
   B) Matthew prefers jobs that allow him to work outdoors
   C) Lucinda makes an appointment with the beach resort restaurant manager to interview for the summer waitressing position that was advertised in the newspaper
   D) Doug's ice cream shop stays open until 11 p.m. during the summer months

5. Erin is twelve years old. For three years, she has been asking her parents for a dog. Her parents have told her that they believe a dog would not be happy in an apartment, but they have given her permission to have a bird. Erin has not yet decided what kind of bird she would like to have
   A) Erin's parents like birds better than they like dogs
   B) Erin does not like birds
   C) Erin and her parents live in an apartment
   D) Erin and her parents would like to move

6. Here are some words translated from an artificial language.

   gorblflur means fan belt

   pixngorbl means ceiling fan

   arthtusl means tile roof

   Which word could mean "ceiling tile" ?

   A) gorbltusl

   B) flurgorbl

   C) arthflur

   D) pixnarth

SPACE FOR ROUGH WORK

7. Here are some words translated from an artificial language.

hapllesh means cloudburst

srenchoch means pinball

resbosrench means ninepin

Which word could mean "cloud nine" ?

A) leshsrench
B) ochhapl
C) haploch
D) haplresbo

8. Here are some words translated from an artificial language.

agnoscrenia means poisonous spider

delanocrenia means poisonous snake

agnosdeery means brown spider

Which word could mean "black widow spider" ?

A) deeryclostagnos
B) agnosdelano
C) agnosvitriblunin
D) trymuttiagnos

9. Here are some words translated from an artificial language.

moolokarn means blue sky

wilkospadi means bicycle race

moolowilko means blue bicycle

Which word could mean "racecar" ?

A) wilkozwet
B) spadiwilko
C) moolobreil
D) spadivolo

10. Here are some words translated from an artificial language.

migenlasan means cupboard

lasanpoen means boardwalk

cuopdansa means pullman

Which word could mean "walkway" ?

A) poenmigen
B) cuopeisel
C) lasandansa
D) poenforc

In each question below is given a statement followed by three assumptions numbered I, II and III. You have to consider the statement and the following assumptions, decide which of the assumptions is implicit in the statement and choose your answer accordingly.

11. **Statement :** "Wanted a two bedroom flat in the court area for immediate possession." – An advertisement.

Assumptions :

I : Flats are available in court area.

II : Some people will respond to the advertisement.

III : It is a practice to give such an advertisement.

A) All are implicit
B) Only II is implicit
C) Only I and II are implicit
D) None is implicit

SPACE FOR ROUGH WORK

12. **Statement :** This book is so prepared that even a layman can study science in the absence of a teacher.

    Assumptions :

    I : A layman wishes to study science without a teacher.

    II : A teacher may not always be available to teach science.

    III : A layman generally finds it difficult to learn science on its own.

    A) Only I and II are implicit

    B) Only II and III are implicit

    C) Only I and III are implicit

    D) All are implicit

13. **Statement :** Government has spoiled many top ranking financial institutions by appointing bureaucrats as Directors of these institutions.

    Conclusions :

    I : Government should appoint Directors of the financial institutes taking into consideration the expertise of the person in the area of finance.

    II : The Director of the financial institute should have expertise commensurate with the financial work carried out by the institute.

    A) Only conclusion I follows

    B) Only conclusion II follows

    C) Either I or II follows

    D) Both I and II follows

14. **Statement :** Population increase coupled with depleting resources is going to be the scenario of many developing countries in days to come.

    Conclusions :

    I : The population of developing countries will not continue to increase in future.

    II : It will be very difficult for the governments of developing countries to provide its people decent quality of life.

    A) Only conclusion I follows

    B) Only conclusion II follows

    C) Either I or II follows

    D) Neither I nor II follows

15. Who has been conferred with The Hindu Prize 2016 at the 7th Edition of the Hindu Lit. for Life festival 2017 ?

    A) Pradeep Sebastian

    B) Manjula Padmanabhan

    C) Kiran Doshi

    D) Anil Menon

16. Which Firm has commissioned a 500 MW Thermal Unit In West Bengal on January 16, 2017 ?

    A) BHEL

    B) NTPC

    C) Adani Power

    D) L&T

SPACE FOR ROUGH WORK

17. Which business enhancement program has been launched by Yes Bank recently to deepen its collaborations with financial technology start-ups ?

A) Yes Fintech

B) Yes TechnoFin

C) Yes TechnoBit

D) Yes BitTech

18. Which Indian cricketer has been inducted into the Legends Club 'Hall of Fame' on January 17, 2017 ?

A) Mohammad Azharuddin

B) Javagal Srinath

C) Kapil Dev

D) Ravi Shastri

19. What is the name of the Chinese Robot Journalist who made its debut reporting on January 18, 2017 by writing an article in a second ?

A) A. Xiao Nan.

B) Clank

C) Changchang

D) Tachikomas

Each question has an underlined word followed by four answer choices. You will choose the word that is a necessary part of the underlined word.

20. monopoly

A) corrupt

B) exclusive

C) rich

D) gigantic

21. guitar

A) band

B) teacher

C) songs

D) strings

22. election

A) president

B) voter

C) november

D) nation

23. shoe

A) sole

B) leather

C) laces

D) walking

24. swimming

A) pool

B) bathing suit

C) water

D) life jacket

SPACE FOR ROUGH WORK

25. From a point P on a level ground, the angle of elevation of the top tower is 30°. If the tower is 100 m high, the distance of point P from the foot of the tower is

A) 149 m

B) 156 m

C) 173 m

D) 200 m

26. Two trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is

A) 2 : 3

B) 4 : 3

C) 6 : 7

D) 9 : 16

27. A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train is

A) 45 m

B) 50 m

C) 54 m

D) 72 m

28. A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/hr. The other one walks at 5.4 km/hr. The train needs 8.4 and 8.5 seconds respectively to overtake them. What is the speed of the train if both the persons are walking in the same direction as the train ?

A) 66 km/hr

B) 72 km/hr

C) 78 km/hr

D) 81 km/hr

29. A train travelling at 48 kmph completely crosses another train having half its length and travelling in opposite direction at 42 kmph, in 12 seconds. It also passes a railway platform in 45 seconds. The length of the platform is

A) 400 m

B) 450 m

C) 560 m

D) 600 m

30. The hotel is two blocks east of the drugstore. The market is one block west of the hotel. The drugstore is west of the market. If the first two statements are true, the third statement is

A) true

B) false

C) uncertain

D) insufficient Data

SPACE FOR ROUGH WORK

31. Vincent has a paper route. Each morning, he delivers 37 newspapers to customers in his neighborhood. It takes Vincent 50 minutes to deliver all the papers. If Vincent is sick or has other plans, his friend Thomas, who lives on the same street, will sometimes deliver the papers for him.

From the above data, which of the following statements must be true ?

A) Vincent and Thomas live in the same neighborhood.

B) It takes Thomas more than 50 minutes to deliver the papers.

C) It is dark outside when Vincent begins his deliveries.

D) Thomas would like to have his own paper route.

32. Which number pair comes next in the series ?

4 7 26 10 13 20 16

A) 14 4

B) 14 17

C) 18 14

D) 19 14

33. Which word does not belong with the others ?

A) Cornea

B) Retina

C) Vision

D) Pupil

34. Pick the word from the four options which most nearly opposite in meaning to the bold word.

RECALCITRANT

A) feckless

B) yielding

C) somber

D) polished

In each question below is given a statement followed by two courses of action numbered I and II. You have to assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the suggested courses of action logically follow(s) for pursuing.

35. Statement : Severe drought is reported to have set in several parts of the country.

Courses of Action :

I : Government should immediately make arrangement for providing financial assistance to those affected.

II : Food, water and fodder should immediately be sent to all these areas to save the people and cattle.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

SPACE FOR ROUGH WORK

36. **Statement :** Since its launching in 1981, Vayudoot has so far accumulated losses amounting to Rs. 153 crore.

Courses of Action :

I : Vayudoot should be directed to reduce wasteful expenditure and to increase passenger fare.

II : An amount of about Rs. 300 crore should be provided to Vayudoot to make the airliner economically viable.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

37. **Statement :** Exporters in the capital are alleging that commercial banks are violating a Reserve Bank of India directive to operate a post shipment export credit denominated in foreign currency at international rates from January this year.

Courses of Action :

I : The officers concerned in the commercial banks are to be suspended.

II : The RBI should be asked to stop giving such directives to commercial banks.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

38. **Statement :** The Asian Development Bank has approved a $ 285 million loan to finance a project to construct coal ports by Paradip and Madras Port Trusts.

Courses of Action :

I : India should use financial assistance from other international financial organisations to develop such ports in other places.

II : India should not seek such financial assistance from the international financial agencies.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

39. **Statement :** Doordarshan is concerned about the quality of its programmes particularly in view of stiff competition it is facing from STAR and other satellite TV channels and is contemplating various measures to attract talent for its programmes.

Courses of Action :

I : In an effort to attract talent, the Doordarshan has decided to revise its fee structure for the artists.

II : The fee structure should not be revised until other electronic media also revise it.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

SPACE FOR ROUGH WORK

40. **Statement :** The car dealer found that there was a tremendous response for the new XYZ's car-booking with long queues of people complaining about the duration of business hours and arrangements.

Courses of Action :

I : People should make their arrangement of lunch and snacks while going for car XYZ's booking and be ready to spend several hours.

II : Arrangement should be made for more booking desks and increased business hours to serve more people in less time.

A) Only I follows

B) Only II follows

C) Either I or II follows

D) Neither I nor II follows

41. Which of the following is not associated with the UNO ?

A) ILO

B) WHO

C) ASEAN

D) All of the options

42. The chairmanship/presidency of the UN Security Council rotates among the Council Members

A) every 6 months

B) every 3 months

C) every year

D) every month

43. Which of the following is not a chief organ of the United Nations Organisations ?

A) International Labour Organisation

B) Security Council

C) International Court of Justice

D) General Assembly

44. Permanent Secretariat to coordinate the implementation of SAARC programme is located at

A) Dhaka

B) New Delhi

C) Colombo

D) Kathmandu

45. The Indian delegation to the First World Conference on Human Rights was led by

A) Dr. Manmohan Singh

B) Farooq Abdullah

C) Dinesh Singh

D) Alam Khan

46. Who is the father of Geometry ?

A) Aristotle

B) Euclid

C) Pythagoras

D) Kepler

SPACE FOR ROUGH WORK

47. What is common between Kutty, Shankar, Laxman and Sudhir Dar ?
    A) Film Direction
    B) Drawing Cartoons
    C) Instrumental Music
    D) Classical Dance

48. The Indian to beat the computers in mathematical wizardry is
    A) Ramanujam
    B) Rina Panigrahi
    C) Raja Ramanna
    D) Shakunthala Devi

49. Jude Felix is a famous Indian player in which of the fields ?
    A) Volleyball
    B) Tennis
    C) Football
    D) Hockey

50. Former Australian captain Mark Taylor has had several nicknames over his playing career. Which of the following was NOT one of them ?
    A) Tubby
    B) Stodge
    C) Helium Bat
    D) Stumpy

51. Two stations A and B are 110 km apart on a straight line. One train starts from A at 7 a.m. and travels towards B at 20 kmph. Another train starts from B at 8 a.m. and travels towards A at a speed of 25 kmph. At what time will they meet ?
    A) 9 a.m.
    B) 10 a.m.
    C) 10.30 a.m.
    D) 11 a.m.

52. How many seconds will a 500 metre long train take to cross a man walking with a speed of 3 km/hr in the direction of the moving train if the speed of the train is 63 km/hr ?
    A) 25
    B) 30
    C) 40
    D) 45

53. Two goods train each 500 m long, are running in opposite directions on parallel tracks. Their speeds are 45 km/hr and 30 km/hr respectively. Find the time taken by the slower train to pass the driver of the faster one.
    A) 12 sec
    B) 24 sec
    C) 48 sec
    D) 60 sec

**SPACE FOR ROUGH WORK**

54. A can do a work in 15 days and B in 20 days. If they work on it together for 4 days, then the fraction of the work that is left is
   A) 1/4
   B) 1/10
   C) 7/15
   D) 8/15

55. A can lay railway track between two given stations in 16 days and B can do the same job in 12 days. With help of C, they did the job in 4 days only. Then, C alone can do the job in
   A) 9 1/5 days
   B) 9 2/5 days
   C) 9 3/5 days
   D) 10

56. The year 1995 is the Golden Jubilee year of which of the following International Organisations ?
   A) UNO
   B) NAM
   C) GATT (now WTO)
   D) ASEAN

57. The United Nations Conference on Trade And Development (UNCTAD) is located at which of the following places ?
   A) Geneva
   B) Rome
   C) Paris
   D) Vienna

58. Amnesty International is an organisation associated with which of the following fields ?
   A) Protection of Cruelty to animals
   B) Environment protection
   C) Protection of human rights
   D) Protection of historic monuments

59. UN General Assembly elects a President and how many Vice Presidents at the start of its each regular session ?
   A) Seven
   B) Fifteen
   C) Twenty one
   D) Two

60. The treaty which ushered in NATO, was signed by the member nations at
   A) Geneva
   B) London
   C) Paris
   D) Washington

SPACE FOR ROUGH WORK

PART – B
ELECTRONICS & COMMUNICATION
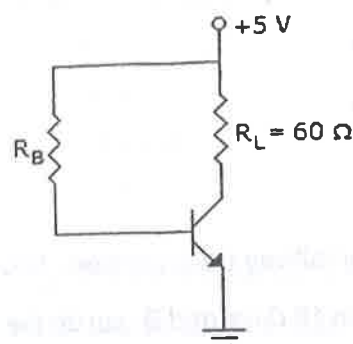
Choose the most appropriate option.

61. An Astable Multivibrator circuit using IC 555 timer is shown below. Assume that the circuit is oscillating steadily
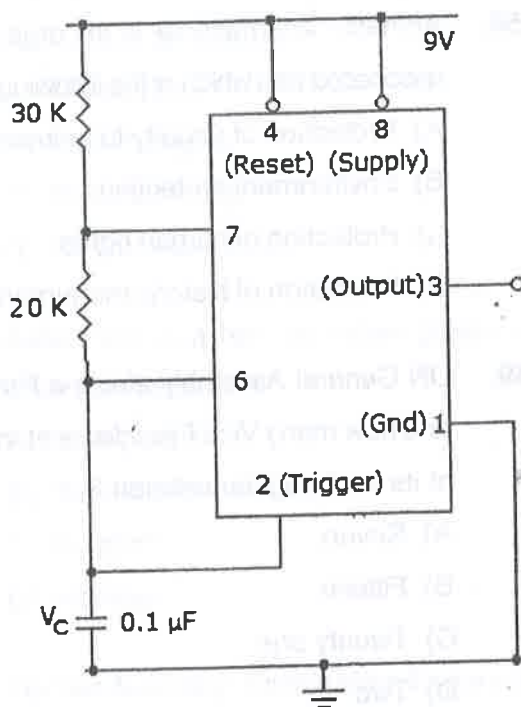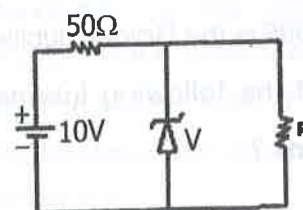

The voltage V_c across capacitor varies between

A) 3 V to 5 V

B) 3 V to 6 V

C) 0 V to 6 V

D) 4.5 V to 9 V

62. Find resistance R_B to bring transistor to threshold of saturation ($V_{CB}=0$), $V_{BE}=0.7$ V, $\alpha = 0.96$.

A) 1.44 KΩ

B) 15 KΩ

C) 160 KΩ

D) 1 KΩ

63. The 6 V Zener diode shown in figure has zero resistance and a knee current of 5 mA. The minimum value of R so that the voltage across it does not fall below 6 V is

A) 1.2 KΩ

B) 80 Ω

C) 50 Ω

D) 800 $\dot{\Omega}$

SPACE FOR ROUGH WORK

64. The transfer function of a controller is given as $K_1 + K_2/s$, where K_1 and K_2 are constants. What type of controller is this ?

A) Proportional

B) Proportional plus derivative

C) Proportional plus integral

D) Proportional plus integral plus derivative

65. For parallel plane waveguides, which is the mode with lowest cut-off frequency ?

A) TE_{10} B) TM_{10}

C) TEM   D) TE_{11}

66. If the connection of two-port is such that the transmission matrix of the overall network is the product of the transmission matrices of the individual networks, what type of connection is it ?

A) Series connection

B) Cascade connection

C) Parallel connection

D) None of the options

67. The value of (V_{out} / V_{in}) in the circuit shown below is

A) 3   B) −0.5

C) −1.5   D) −1

68. The output of an Op-Amp based comparator having Sine wave as input will be

A) Ramp voltage

B) Sine wave

C) Rectangular wave

D) Saw-tooth wave

69. The dc level of a signal can be shifted by

A) Limiters

B) Clampers

C) Peak detectors

D) Clipper

70. A junction FET, can be used as a voltage variable resistor

A) at pinch-off condition

B) beyond pinch-off voltage

C) well below pinch-off condition
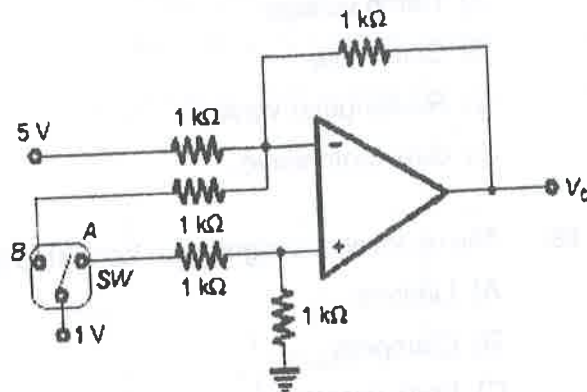
D) for any value of VDS

71. The power consumed in the circuit is
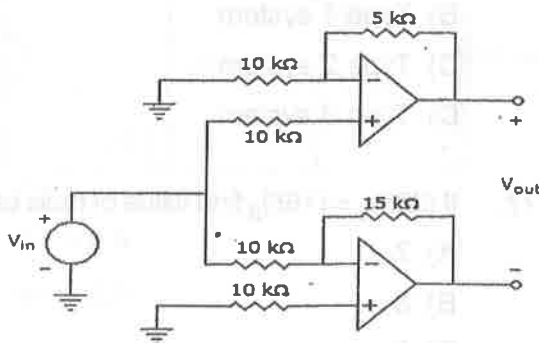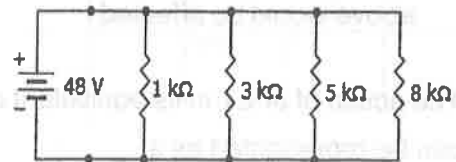

A) 4.8 W

B) 6 W

C) 3.82 W

D) 9.6 W

SPACE FOR ROUGH WORK

72. In the circuit shown below, $V_0 = V_{0A}$ for switch SW in position A and $V_0 = V_{0B}$ for switch SW in position B. Assume that the OP-AMP is ideal, the value of V_{0B}/V_{0A} is

A) 2   B) 3

C) 1.5   D) 2.5

73. In an amplifier with negative feedback
    A) Only the gain of the amplifier is affected
    B) Only the bandwidth of the amplifier are affected
    C) Only the input and output impedance are affected
    D) All of the four parameters mentioned above would be affected

74. The action of JFET in its equivalent circuit can be represented as a
    A) Current controlled Current source
    B) Current controlled Voltage source
    C) Voltage controlled Voltage source
   D) Voltage controlled Current source

75. Find current flowing through 1 H inductor at $t = 0^+$, at which switch 'S' is just opened.
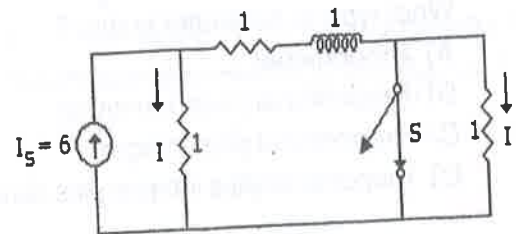
A) 6

B) 0

C) 3

D) 5

76. The feedback control system shown in figure below represents

A) Type 0 system
B) Type 1 system
C) Type 2 system
D) Type 3 system

77. If $(225)_Y = (165)_8$ find value of radix base Y
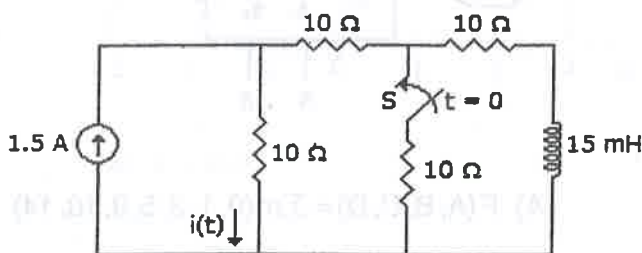   A) 7
    B) 8
    C) 9
    D) 11

SPACE FOR ROUGH WORK

B

Sci. Off. –

78. Which of the following statements is true if the inductor is shorted in the circuit ?
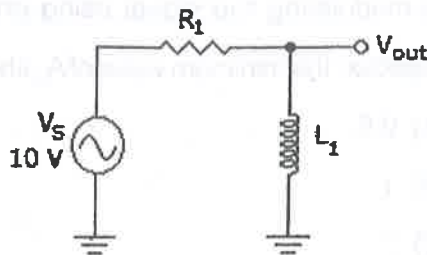
A) Each component drops 5 V

B) The impedance seen by voltage source equals 0 Ω

C) The power factor equals 1

D) The phase angle equals 90°

79. In the circuit shown below, switch S is open for a long time and is closed at t = 0. The value of current i(t) when t → ∞ is

A) 0.9 A

B) 0.0 A

C) 1.5 A

D) 0.75 A

80. Which of the following is a solution to the differential equation ?
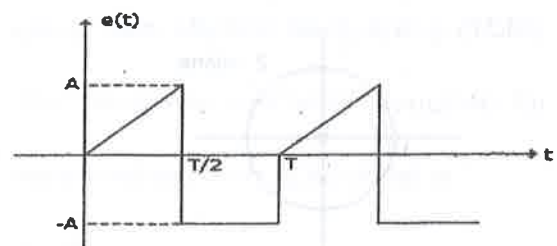
$$\frac{dx(t)}{dt} + 3x(t) = 0$$

A) $x(t) = 3e^{-t}$

B) $x(t) = 2e^{-3t}$

C) $x(t) = \frac{-3}{2}t^2$

D) $x(t) = -3t^2$

81. A 4 cm by 3 cm rectangular waveguide with air cavity, is operating at 12 GHz with TE_{11} mode. The cut-off frequency is

A) 6.25 GHz

B) 4.75 GHz

C) 1.5 GHz

D) 8.75 GHz

82. The RMS value of the periodic waveform e (t) shown below is

A) $\sqrt{\frac{3}{2}}$ A

B) $\sqrt{\frac{2}{3}}$ A

C) $\sqrt{\frac{1}{3}}$ A

D) 3A

SPACE FOR ROUGH WORK

83. The value of the emitter resistance R_E in a differential amplifier affects
    A) Difference mode gain Ad
    B) Common mode gain Ac
    C) Both Ad and Ac
    D) Does not affect either Ad and Ac
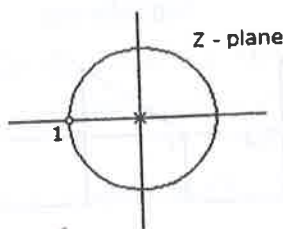
84. For an Op-Amp having differential gain Av and common-mode gain Ac, the CMRR is given by
    A) Av + Ac   B) Av/Ac
    C) 1 + (Av/Ac)   D) Ac/Av

85. The characteristic polynomial of a system is $q(s) = 2s^5 + s^4 + 4s^3 + 2s^2 + 1$. The system is
    A) stable
    B) marginally stable
    C) unstable
    D) oscillatory

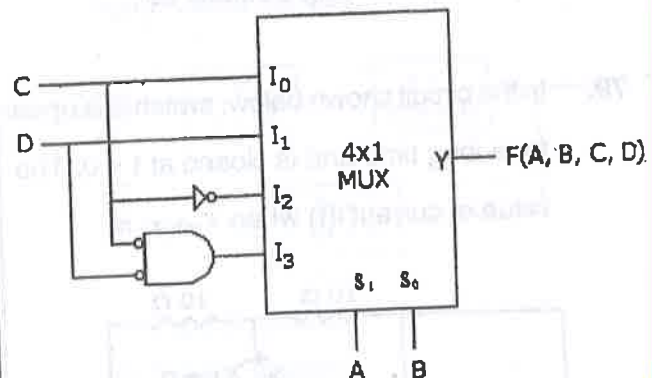86. For pole-zero plot shown below

Z - plane

The system is
    A) minimum phase
    B) maximum phase
    C) mixed phase
    D) none of the options

87. Consider the Amplitude Modulated (AM) signal $A_c \cos\omega_c t + 2\cos\omega_m t\cos\omega_c t$. For demodulating the signal using envelope detector, the minimum value of A_c should be
    A) 0.5
    B) 1
    C) 2
    D) 3

88. The Boolean function realized by the logic circuit shown is
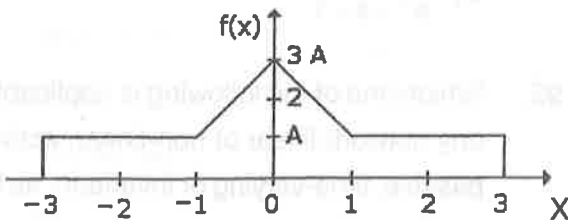

A) $F(A, B, C, D) = \sum m(0, 1, 3, 5, 9, 10, 14)$

B) $F(A, B, C, D) = \sum m(2, 3, 5, 7, 8, 12, 13)$

C) $F(A, B, C, D) = \sum m(1, 2, 4, 5, 11, 14, 15)$

D) $F(A, B, C, D) = \sum m(2, 3, 5, 7, 8, 9, 12)$

SPACE FOR ROUGH WORK

Sci. Off. – E

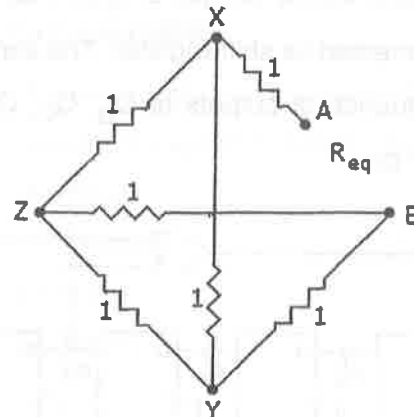**89.** The residues of a complex function at its poles are

$$X(z) = \frac{1-2z}{z(z-1)(z-2)}$$

A) 1/2, – 1/2 and 1

B) 1/2, – 1/2 and – 1

C) 1/2, 1 and – 3/2

D) 1/2, 1 and 3/2

90. The function shown in figure can represent a probability density function for A

A) A = 1/4

B) A = 1/6

C) A = 1/8

D) A = 1/2

91. Find equivalent resistance between R_{AB}.

A) 1 Ω

B) 1/3 Ω

C) 2/3 Ω

D) 2 Ω

92. Four band limited messages W, W, 2 W and 3 W respectively are to be multiplexed using Time Division Multiplexing (TDM). The minimum bandwidth required for transmission of this TDM signal is

A) W

B) 3 W

C) 6 W

D) 7 W

SPACE FOR ROUGH WORK

93. Figure below shows D type Flip-Flops connected as shift register. The expected sequence of outputs at Q_D, Q_C, Q_B, Q_A can be
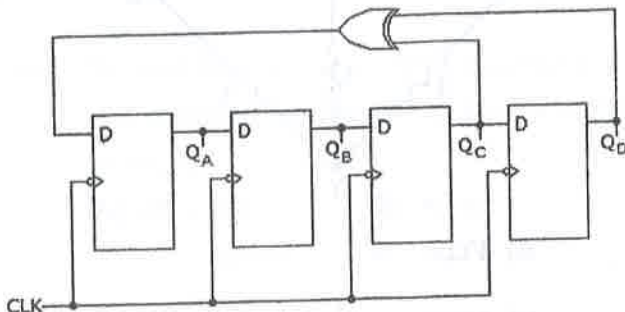

```
1.   0   0   0   1
     0   0   1   0
     0   1   0   0
     0   0   0   1

2.   0   0   1   1
     0   0   0   1
     1   0   0   0
     0   1   0   0

3.   1   1   1   0
     1   1   1   1
     0   1   1   1
     0   0   1   1
```
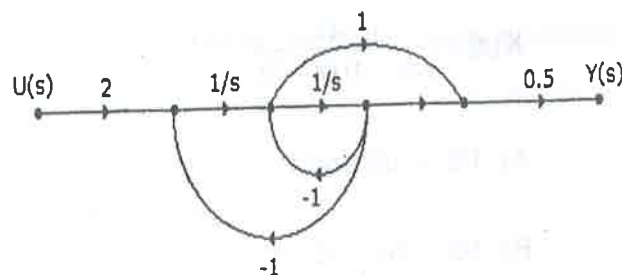
A) 1 and 2 only

B) 2 and 3 only

C) 1, 2 and 3

D) none of the options

94. The signal flow graph of a system is shown below

The transfer of the system is

A) $\dfrac{s+1}{s^2+1}$

B) $\dfrac{s-1}{s^2+1}$

C) $\dfrac{s+1}{s^2+s+1}$

D) $\dfrac{s-1}{s^2+s+1}$

95. Which one of the following is applicable to any network-linear or non-linear, active or passive, time-varying or invariant - as long as Kirchhoff laws are *not* violated ?

A) Tellegen's theorem

B) Reciprocity theorem

C) Maximum power transfer theorem

D) Superposition theorem

96. Which of the following bridges is also used in an oscillator ?

A) Maxwell   B) Schering

C) Hay   D) Wien

SPACE FOR ROUGH WORK

PART – C
COMPUTER SCIENCE/ENGINEERING

Choose the most appropriate option.

97. Consider the following C program

```
int main()
{
 int x, y, m, n;
 scanf ("%d, %d", &x, &y);
 /* x > 0 and y > 0 */
 m = x; n = y;
 while (m != n)
 {
 if(m>n)
 m = m – n;
 else
 n = n – m;
 }
 printf("%d", n);
}
```

What does the program compute ?

A) x + y using repeated subtraction

B) x mod y using repeated subtraction

C) the greatest common divisor of x and y

D) the least common multiple of x and y

98. Which data structure is used in breadth first search of a graph to hold nodes ?

A) Stack

B) Queue

C) Tree

D) Array

99. Recursion uses more memory space than iteration because

A) it uses stack instead of queue

B) every recursive call has to be stored

C) both A & B are true

D) none of the options is true

100. A balance factor in AVL tree is used to check

A) what rotation to make

B) if all child nodes are at same level

C) when the last rotation occured

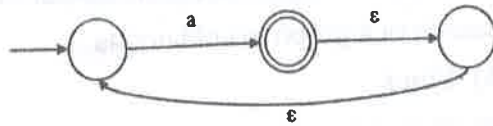D) if the tree is unbalanced

101. P stands for probability.

If $P(A \cap B) = P(A) * P(B)$, then the events A and B are called

A) Independent

B) Dependent

C) Exhaustive

D) None of the options

SPACE FOR ROUGH WORK

102. What is the complement of the language accepted by the NFA shown below ?

(1) ∅   (2) {ε}   (3) a*   (4) {a, ε}

   A) 1

   B) 2

   C) 3

   D) 4

103. In a compiler, keywords of a language are recognized during

   A) parsing of the program

   B) the code generation

   C) the lexical analysis of the program

   D) dataflow analysis

104. Which of the following transport layer protocols is used to support electronic mail ?

   A) SMTP

   B) IP

   C) TCP

   D) UDP

105. A positive AND gate is also a negative

   A) NAND gate

   B) NOR gate

   C) AND gate

   D) OR gate

106. The ability to temporarily halt the CPU and use this time to send information on buses is called

   A) Direct memory access

   B) Vectoring the interrupt

   C) Polling

   D) Cycle stealing

107. Which of the following page replacement algorithms suffers from Belady's anomaly ?

   A) FIFO

   B) LRU

   C) Optimal Page Replacement

   D) Both LRU and FIFO

108. Increasing the RAM of a computer typically improves performance because

   A) Virtual memory increases

   B) Larger RAMs are faster

   C) Fewer page faults occur

   D) Fewer segmentation faults occur

SPACE FOR ROUGH WORK

PART – D
INFORMATION TECHNOLOGY

Choose the most appropriate option.

109. Which type of traversal of binary search tree outputs the value in sorted order ?

    A) Pre-order

    B) In-order

    C) Post-order

    D) Level-order

110. Which one of the following is not an approach to compute the Minimum Spanning Tree in a weighted graph ?

    A) Kruskal

    B) Prim's

    C) Boruvka's

    D) Dijkstra's

111. Cartesian product in relational algebra is

    A) a unary operator

    B) a binary operator

    C) a ternary operator

    D) not defined

112. What is the probability of getting a sum 9 from two throws of dice ?

    A) 1 / 3

    B) 1 / 9

    C) 2 / 9

    D) 1 / 12

113. Which one of the following is the rank of the matrix $A = \begin{pmatrix} 0 & 0 & 0 & 0 \\ 4 & 2 & 3 & 0 \\ 1 & 0 & 0 & 0 \\ 4 & 0 & 3 & 0 \end{pmatrix}$?

    A) 0

    B) 1

    C) 2

    D) 3

114. Output of the following circuit is
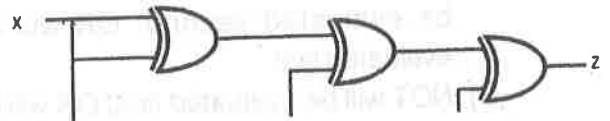
    A) 0

    B) 1

    C) X

    D) X'

SPACE FOR ROUGH WORK

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115. It is required to find the name of those cities with temperature and condition from table weather whose condition is either sunny or cloudy but temperature must be greater than 70. Which one of the following is the correct SQL statement to perform above query ?
    A) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' AND condition = 'cloudy' OR temperature > 70;
    B) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' OR condition = 'cloudy' OR temperature > 70;
    C) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' OR condition = 'cloudy' AND temperature > 70;
    D) SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' AND condition = 'cloudy' AND temperature > 70;

116. If an SQL query involves NOT, AND, OR with no parenthesis
    A) NOT will be evaluated first; AND will be evaluated second; OR will be evaluated last
    B) NOT will be evaluated first; OR will be evaluated second; AND will be evaluated last
    C) AND will be evaluated first; OR will be evaluated second; NOT will be evaluated last
    D) The order of occurrence determines the order of evaluation

117. How many full adders are required to construct an m-bit parallel adder ?
    A) m / 2
    B) m – 1
    C) m
    D) m + 1

118. A full adder has
    A) 2 inputs and 2 outputs
    B) 3 inputs and 2 outputs
    C) 2 inputs and 1 output
    D) 3 inputs and 1 output

119. A class member declared protected in Java becomes member of subclass of which type ?
    A) public member
    B) private member
    C) protected member
    D) static member

120. Which one of the following sorting techniques will efficiently sort the data in an array, if elements of the array are 10, 12, 15, 18, 20, 25, 30 and 28 ?
    A) Selection sort
    B) Insertion sort
    C) Heap sort
    D) Quick sort

SPACE FOR ROUGH WORK