PUNJAB STATE FEDERATION OF COOPERATIVE SUGAR MILL (LTD.)

POST: MANU. CHEMIST & LAB INCHARGE / DEPUTY CHIEF CHEMIST

QUESTION BOOKLET AND ANSWER KEY

SERIES (A)

FOR RECRUITMENT TEST HELD ON 01-03-2026

(MORNING)

1. 'ਕਣਕ ਨਾਲ ਬੋਰੀ ਭਰੋ' ਵਾਕ ਵਿਚ 'ਕਣਕ' ਸ਼ਬਦ ਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
   A) ਆਮ ਨਾਂਵ   B) ਖਾਸ ਨਾਂਵ   C) ਵਸਤਵਾਚਕ ਨਾਂਵ   D) ਭਾਵਵਾਚਕ ਨਾਂਵ

2. 'ਔਹ ਕੌਣ ਆ ਰਿਹਾ ਹੈ?' ਵਾਕ ਵਿਚ 'ਔਹ' ਸ਼ਬਦ ਪੜਨਾਂਵ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
   A) ਪੁਰਖਵਾਚਕ   B) ਨਿਜਵਾਚਕ   C) ਨਿਸਚੇਵਾਚਕ   D) ਅਨਿਸਚਿਤ ਵਾਚਕ

3. 'ਮੇਲੇ ਵਿੱਚ ਬਹੁਤ ਲੋਕ ਆਏ' ਵਾਕ ਵਿੱਚ 'ਬਹੁਤ' ਸ਼ਬਦ ਵਿਸ਼ੇਸ਼ਣ ਹੈ। ਇਸਦੀ ਕਿਸਮ ਦੱਸੋ:
   A) ਨਿਸਚੇਵਾਚਕ   B) ਪਰਿਮਾਣਵਾਚਕ   C) ਗੁਣਵਾਚਕ   D) ਸੰਖਿਅਕ ਵਾਚਕ

4. 'ਲੜਕੀ ਬੋਲ ਨਾ ਸਕੀ' ਇਸ ਵਾਕ ਵਿਚ ਕਿਰਿਆ ਦੀ ਕਿਸਮ ਦੱਸੋ:
   A) ਸਕਰਮਕ   B) ਅਕਰਮਕ   C) ਸੰਸਰਗੀ   D) ਪੜਨਾਵੀਂ

5. ਛਿੱਟੇ ਮੂੰਹ ! ਤੂੰ ਤਾਂ ਸਾਰਾ ਕੰਮ ਖਰਾਬ ਕਰ ਦਿੱਤਾ ਇਸ ਵਾਕ ਵਿੱਚ ਵਿਸਮਿਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋ:
   A) ਸਤਿਕਾਰਵਾਚਕ   B) ਸੰਬੋਧਨੀ   C) ਫਿਟਕਾਰਵਾਚਕ   D) ਅਸੀਸਵਾਚਕ

6. ਮੈਂ ਬਜ਼ਾਰੋਂ ਕਾਪੀਆਂ ਵੀ ਖਰੀਦੀਆਂ ਤੇ ਕਿਤਾਬਾਂ ਵੀ ਖਰੀਦੀਆਂ । ਇਸ ਵਾਕ ਦੀ ਕਿਸਮ ਪਛਾਣੋ:
   A) ਸਧਾਰਨ   B) ਸੰਯੁਕਤ   C) ਮਿਸ਼ਰਤ   D) ਨਾਂਹਵਾਚਕ

7. ਸਹੀ ਵਾਕ ਚੁਣੋ:
   A) ਮੱਝਾਂ ਚੁਗਦੀ ਹੈ।   B) ਮੱਝਾਂ ਚੁਗਦੀ ਹਨ।   C) ਮੱਝਾਂ ਚੁਗਦੀਆਂ ਹਨ।   D) ਮੱਝਾਂ ਚੁਗਦੇ ਹਨ।

8. ਜਿਹੜੀ ਗੱਲ ਆਪ ਨਾਲ ਬੀਤੀ ਹੋਵੇ। ਇਸ ਵਾਕ ਲਈ ਸਹੀ ਸ਼ਬਦ ਚੁਣੋ:
   A) ਜੱਗਬੀਤੀ   B) ਪਰਬੀਤੀ   C) ਲੋਕਬੀਤੀ   D) ਹੱਡਬੀਤੀ

9. ਉਹ ਕੇਵਲ ਗਰੀਬ ਹੀ ਨਹੀਂ ਸਗੋਂ ਦੁਖੀ ਵੀ ਹੈ। ਇਸ ਵਾਕ ਵਿੱਚੋਂ ਯੋਜਕ ਪਛਾਣੋ:
   A) ਕੇਵਲ   B) ਨਹੀਂ   C) ਸਗੋਂ   D) ਹੈ

10. 'ਉਜਾੜ' ਦਾ ਵਿਰੋਧੀ ਸ਼ਬਦ ਚੁਣੋ:
    A) ਰਹਿਤਲ   B) ਵਸੇਬਾ   C) ਜੰਗਲ   D) ਬੀਆਬਾਨ

11. ਸ਼ੁੱਧ ਸ਼ਬਦ ਜੋੜ ਚੁਣੋ:
    A) ਛੇਵਾਂ   B) ਛੇਮਾਂ   C) ਸ਼ੇਮਾਂ   D) ਛਿਮਾ

12. 'ਨਿਰਮਲ' ਦਾ ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ ਚੁਣੋ:
    A) ਮੈਲ   B) ਮੈਲਾ   C) ਸਾਫ   D) ਗੰਧਲਾ

13. 'ਆਹਰੇ ਲੱਗਣਾ' ਮੁਹਾਵਰੇ ਦਾ ਸਹੀ ਅਰਥ ਚੁਣੋ:
    A) ਛੇੜਨਾ   B) ਘੁੰਮਣਾ   C) ਕੰਮ ਕਰਨਾ   D) ਵਿਹਲਾ ਫਿਰਨਾ

14. ਸ਼ੁੱਧ ਮੁਹਾਵਰਾ ਚੁਣੋ:
    A) ਆਹੂ ਲਾਹੁਣੇ   B) ਆਹੂ ਚੱਖਣੇ   C) ਆਹੂ ਦੇਖਣੇ   D) ਆਹੂ ਮਾਰਨੇ

15. ਖਾਣੇ ਛੋਲੇ _____ ਸਹੀ ਸ਼ਬਦ ਚੁਣ ਕੇ ਅਖਾਣ ਪੂਰਾ ਕਰੋ:
    A) ਡਕਾਰ ਮੁੰਗਫ਼ਲੀ ਦੇ   B) ਡਕਾਰ ਰੋਟੀ ਦੇ   C) ਡਕਾਰ ਪਾਣੀ ਦੇ   D) ਡਕਾਰ ਬਦਾਮਾਂ ਦੇ

Directions (Q 16 – 17) : Mark the word opposite in meaning to the given word.

16. Parsimonious
    A) generous   B) angry   C) happy   D) crude

17. Ameliorate
    A) hasten   B) expedite   C) worsen   D) protect

Directions (Q 18 – 19) : Mark the correct synonym to the given word out of four options:

18. Tepid
    A) keen   B) enthusiastic   C) wasteful   D) lukewarm

19. Sporadic
    A) irregular   B) serious   C) regular   D) continual

Directions (Q 20 – 21) : Mark the option which best replaces the underlined part of the sentences.

20. <u>When the weather was cold</u>, I wear monkey cap.
    A) When the weather has been cold, I wore monkey cap.
    B) When weather is cold, I wear monkey cap.
    C) While the weather is cold, I wear monkey cap.
    D) When weather were cold, I wear monkey cap.

21. <u>Ramesh laid in the shade of a tree</u> before he could walk further.
    A) Ramesh has laid in the shade of a tree before he could walk further.
    B) Ramesh lay in the shade of a tree before he could walk further.
    C) Ramesh lied in the shade of a tree before he could walk further.
    D) Ramesh layed in the shade of a tree before he could walk further.

Directions (Q 22 – 23) : Each question has two blanks, each blank indicating that something has been omitted. Mark the word for each blank which best fits the meaning of the sentence as a whole.
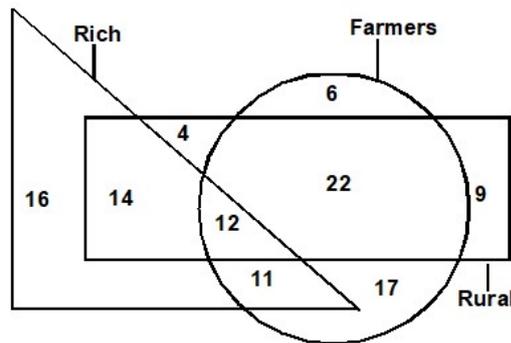
22. Despite being _____ in minerals, this state remains one _____ the poorest in the country.
    A) rich, of   B) dearth, in   C) abundant, as   D) despondent, for

23. The country 's education system still _____ very old-fashioned and is in _____ need of a revamp.
    A) languishes, fastidious   B) stays, firm   C) is, quickly   D) remains, urgent

Directions (Q 24 – 25) : Mark the correct form of the sentence in the indirect speech.

24. He said to me, "what are you doing."
    A) He told me what are you doing.   B) He asked me what I was doing.
    C) He asked me what you were doing.   D) He told me about what he was doing.

25. He said, "Alas! I am undone."
    A) He informed that I was ruined.   B) He cried that I was undone.
    C) He exclaimed sadly that he was undone.   D) He exclaimed that you have been undone.

26. When is Mole Day celebrated?
    A) October 13   B) November 13   C) October 23   D) November 23

27. How was University of Roorkee known at the time of India's independence?
    A) Elphinstone College of Civil Engineering
    B) Fergusson College of Civil Engineering
    C) Ripon College of Civil Engineering
    D) Thomason College of Civil Engineering

28. How India is ranked in the list of countries with most number of World Heritage sites?
    A) 6th B) 7th C) 8th D) 9th

29. Which one of the following statement(s) is(are) true?
    (i) Pechora is Surface to Air missile,   (ii) OSA-AK is Air to Surface missile
    A) Only (i) is true   B) Only (ii) is true
    C) Both (i) and (ii) are true   D) Neither (i) nor (ii) are true

30. In which field has Padam Awardee Onkar Singh Pahwa made his mark?
    A) Art   B) Literature and Education   C) Medicine   D) Trade and Industry

31. Who had inaugurated the old Parliament building of India?
    A) Lord Curzon   B) Lord Irwin   C) Lord Mountbatten   D) Lord Willingdon

32. Which of the following statement is true?
    (i) Part IX deals with Scheduled and Tribal Areas
    (ii) Part XI deals with Relation between Union & States
    A) Only (i)   B) Only (ii)   C) Both (i) and (ii)   D) Neither (i) nor (ii)
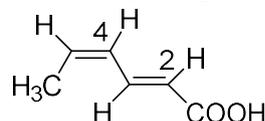
33. In cement production, clay or shale serves as a key source of:
A) silica, alumina, and iron oxide
B) calcium oxide, silica and alumina
C) alumina, calcium oxide and iron oxide
D) silica, alumina, and calcium oxide

34. Where in China, India has Consulates?
A) Beijing and Tianjin   B) Tianjin and Shanghai
C) Shanghai and Guangzhou   D) Guangzhou and Tianjin

35. Which of the following is the longest National Highway?
A) NH 11   B) NH 22   C) NH 33   D) NH 44

36. In the question, two pairs of words are given. The words in each of these pairs are associated with each other following some rule. On the basis of the same rule, you have to select one word from the alternatives which could replace sign (?)
Dog : Bitch ; Sheep : Ewe ; Pig:?
A) Porpoise   B) Porcupine   C) Swine   D) Hound

37. In a certain code 'SENSITIVE' is written as 'QHLVGWGYC'. How is 'MICROSOFT' written in that code?
A) KGAPMQMDT   B) QKETQUQHV
C) KLAUMVMIR   D) LKBTNUNHS

38. In a certain code, 'pick and choose' is written as 'ko ho po' and 'pick up and come' is written as 'to no ko po'. How is 'pick' written in that code ?
A) Ko   B) po   C) Either ko or po   D) cannot be determined

39. In the following question, a number series is given. After the series, a number is given followed by (A), (B), (C), (D) and (E). You have to complete the series starting with the number on the pattern of the sequence of the given series. Then, answer the given questions:
4, 14, 42, 147, 588, 2058, 10290,
8, (A), (B), (C), (D), (E)
Which number will come in place of (C)?
A) 28   B) 1176   C) 294   D) 216

40. Jatin's mother is Ena. Pratap is Bani's father. Sukrit is the son of Garv. Suyog's only sister is married to Garv. Suyog's is Anshum's son. Ena's husband is the only son of Pratap . Anshum is the wife of Pratap. Bani is the mother of Sukrit . How is Pratap related to Jatin?
A) Paternal uncle   B) Maternal grandfather   C) Father   D) Paternal grandfather

41. In a row of 28 students, Jamuna was 12th from the extreme left end and Ganga was 19th from the extreme right end. If Saraswati was seated exactly between them, then what was Saraswati's position from the right end ? Assume that the students were seated facing North.
A) 17th B) 16th C) 20th D) 18th

42. Six people are sitting in two parallel rows with 3 people each in such a way that there is equal distance between adjacent persons. S, T and U are seated in the same row facing South. X, Y and Z are seated in the same row facing North. U sits at the extreme right end of their row and is exactly opposite of X. T is the immediate neighbour of U and sits exactly opposite of Z. Who sits at the extreme right end of the row facing North ?
A) Z   B) X   C) U   D) Y

43. By interchanging the given two signs and numbers which of the following equation will be correct?
+ and –, 7 and 6
A) $4 \times 7 + 6 - 3 \div 1 = 20$ B) $8 \times 7 + 5 \div 1 - 6 = 17$
C) $7 - 6 \times 3 + 4 \div 1 = 8$ D) $7 \times 2 - 6 + 4 \div 2 = 13$

44. Nirav's house is 40 mt. South of Akash's house. Daksh's house is to the East of Akash's house in a straight line at a distance of X mt. Prakash's house is to the West of Akash's house in a straight line at a distance of Y mt. if the shortest distance between Prakash's house and Nirav's house is 50 mt. and the shortest distance between Daksh's house and Nirav's house is also 50 mt., then what is the distance between Prakash's house and Daksh's house?
A) 60 mt.   B) 30 mt.   C) 80 mt.   D) 40 mt.

45. In the given diagram, the circle stands for 'farmers', the rectangle stands for 'rural' and the triangle stands for 'rich'. The numbers given in the different segments represent the number of persons of that category. How many rural people are either farmers or rich but not both?

A) 28   B) 36   C) 25   D) 47

46. Documents converted to _____ can be published to the Web.
A) SMTP   B) HTML   C) HTTP   D) DHCP

47. With regard to MS-WORD, to find a word to replace "happiness," use the:
A) Spelling checker.   B) Dictionary.   C) Autocorrect feature.   D) Thesaurus.

48. A realistic term that captures the idea that the information that comes out of a computer system is only as good, accurate, and valid as the data that goes into it is known as:
A) WYSIWYG.   B) GIGI.   C) GIGO.   D) Virtual reality.

49. The term _____ generally means using some combination of text, graphics, animation, video, music, voice, and sound effects to communicate.
A) MIDI   B) Hyperlinking   C) WYSIWYG   D) Multimedia

50. In MS-EXCEL, the formulae used to calculate the sum of values from the cell D1 to D20 is:
A) =sum(D1-D20)   B) =sum(D1,D20)   C) =sum(D1:D20)   D) =sum(D1+D20)

51. _____ are used for manufacturing CPU chips used in a computer and the CPU chip is made out of _____.
A) Buses; Carbon   B) Control Units; Copper
C) Semiconductors; Silica   D) Optical Fiber Cables; Silver

52. For each instruction of a program in the memory, the CPU goes through a
A) decode - fetch - execute sequence.   B) execute - store - decode sequence.
C) fetch - decode - execute sequence.   D) fetch - execute - decode sequence.

53. Which of the following is responsible for the management and coordination of activities and the sharing of the resources of the computer?
A) Application Software   B) Motherboard   C) Operating System   D) RAM

54. What does TCP/IP stand for?
A) Transmission Control Protocol/ Internet Protocol
B) Transport Capture Protocol/ Inside Packet
C) Transmission Control Protocol/ Internet Packet
D) Telecommunications Connection Protocol/ Internet Partitions

55. In the context of e-mail, what is 'spam'?
    A) The act of overloading an e-mail server by using denial-of-service attacks
    B) E-mail messages that are infected with viruses
    C) A large quantity of messages that do not reach the recipient
    D) Unsolicited advertising sent to a large number of recipients

56. Which of the following range best represent the strength of hydrogen bond?
    A) 5 – 10 Kcals   B) 50 – 100 Kcals   C) 100 -200 Kcals   D) 1 – 5 Kcals

57. The correct name of the following compound based on E / Z nomenclature is:

    A) (2E, 4E) – 2, 4- Hexadienoic acid   B) (2E, 4Z) – 2, 4- Hexadienoic acid
    C) (2Z, 4Z) – 2, 4- Hexadienoic acid   D) (2Z, 4E) – 2, 4- Hexadienoic acid

58. The number of optical isomers of $HOCH_2 (CHOH)_4CHO$ is:
    A) 6   B) 24   C) 8   D) 16

59. Which structure is present in α-D- glucopyranose:
    A) Acetal   B) Hemiketal   C) Hemiacetal   D) Ketal

60. The conversion of aldose to next higher aldose can be achieved by:
    A) Kiliani-Fischer Synthesis   B) Wohl´s Method
    C) Ruff´s Method   D) Wolfrom´s Method

61. The pH at which amino acids show no tendency to migrate when placed in electric field is called:
    A) Neutralization point   B) Isoelectric point
    C) Condensation point   D) Eutectic Point

62. Artificial sweetener aspartame based upon peptide bond between amino acids:
    A) L-Aspartic acid and L-Phenyl alanine   B) L-Aspartic acid and D-Phenyl alanine
    C) D-Aspartic acid and D-Phenyl alanine   D) D-Aspartic acid and L-Phenyl alanine

63. Weight of potassium permanganate (gm) required to prepare N/10 $KMnO_4$ solution is:
    A) 18.334   B) 158.264   C) 3.116   D) 15.598

64. The pH of 0.001 M solution of HCl is:
    A) 6   B) 1   C) 4   D) 3

65. The cause of Schttoky defet observed in crystals is due to:
    A) Some anion moves from their lattice site to interstitial sites
    B) Some anion moves from their lattice site to interstitial compound
    C) Equal number of anions and cations are missing from lattice
    D) Due to presence of some impurities

66. Bristles of tooth brushes are made of
    A) Nylon-6   B) Nylon-66   C) Polystyrene   D) PVC

67. Which of the following natural bio polymers are formed as a result of polymerisation of amino-acids?
    A) Starch   B) Cellulose   C) Proteins   D) Nucleic acids

68. The catalyst used for olefin polymerization is
    A) Ziegler-Natta catalyst   B) Wilkinson catalyst
    C) Raney nickel catalyst   D) Merrifield catalyst

69. Antioxidants are added to rubber to protect it from the attack of light, heat & atmospheric ozone. Which of the following is an antioxidant used in rubber?
    A) Alkylated diphenyl amine   B) Carbon   C) Thiokol   D) Agnesium

70. Wood and cotton are mostly made of
    A) glucose monomers linked up in a polymer   B) Polyisoprene
    C) polysaccharides called cellulose   D) amino acids in the form of polypeptides

71. Calculate the difference between molar internal energy & molar enthalpy for a perfect gas at 298.15 K.
    A) 35.859 J mol^{-1} B) 0 J mol^{-1} C) 2.4790 J mol^{-1} D) 8.3145 J mol^{-1}

72. In ionic polymerization, "Living Polymer" is formed when;
    A) propagation reactions do not occur
    B) termination reactions do not occur
    C) initiation reactions occur faster than termination reactions
    D) Amino acids are used as monomers

73. Which of the following statements is false concerning vulcanization of rubber
    A) Vulcanization imparts greater strength to rubber
    B) Vulcanization is a process which adds cross-links to the hydrocarbon chains of rubber
    C) Vulcanization involves adding phosphorous to hot rubber
    D) Vulcanization makes rubber more elastic, allowing it to stretch without breaking

74. Grignard reagent is
    A) ethyl magnesium chloride   B) ethyl chloride
    C) sodium sulphate   D) sodium carbonate

75. The vapour pressure of toluene is 6.811 kPa at 310 K and 24.15 kPa at 340 K. Assuming that the variation of the vapour pressure p with temperature T may be described by the expression
    $$\log (p/kPa) = A - B/T$$
    What are the values of A and B?
    A) $A = 7.059, B = 1930$ K   B) $A = 5.307, B = 1930$ K
    C) $A = 6.971, B = 7780$ K   D) $A = 5.307, B = 7780$ K

76. Calculate the change in the molar Gibbs energy of a perfect gas when it is compressed isothermally at a temperature of 298 K from a pressure of 1 MPa to 5 MPa.
    A) 335 J mol^{-1} B) 1.73 kJ mol^{-1} C) 3.99 kJ mol^{-1} D) 28.6 kJ mol^{-1}

77. For a gas obeying the Van-der-Waal's equation, at the critical temperature,
    A) Both $(\delta p / \delta v)_T$ and $(\delta^2 p/\delta v^2)_T$ are zero.
    B) The first derivative is zero, while the second derivative is non-zero.
    C) The second derivative is zero, while the first derivative is non-zero.
    D) Both the derivatives are non-zero.

78. For what order reaction does the half-life get longer as the initial concentration increases?
    A) zeroth order
    B) first order
    C) second order
    D) none of them because half-life is always independent of the initial concentration

79. The reaction A + 2B → products was found to have the rate law, rate = k[A] [B]^2. Find by what factor the rate of reaction will increase if the concentrations of A and B are doubled.
    A) 2   B) 4   C) 6   D) 8

80. Which of the following can change if only the catalyst is changed for a reaction system?
    A) Enthalpy of reaction   B) Activation energy
    C) Free energy of the reaction   D) Equilibrium constant

81. A gas can be liquified by pressure alone only, when its temperature is _____ its critical temperature.
    A) less than   B) more than   C) less than or equal to   D) equal to or higher than

82. For a reversible exothermic gas-phase reaction, $A + B \leftrightarrow C$, equilibrium conversion will increase with
   A) increase in pressure and increase in temperature
   B) decrease in pressure and increase in temperature
   C) increase in pressure and decrease in temperature
   D) decrease in pressure and decrease in temperature

83. Chlorine acts as a bleaching agent only in the presence of
   A) Dry air   B) Pure oxygen   C) Moisture   D) Sunlight

84. The change in entropy of the system, ΔS_{system}, undergoing a cyclic irreversible process is
   A) greater than zero   B) less than zero
   C) equal to zero   D) equal to the $\Delta S_{sorroundings}$

85. During the chemical dehumidification process of air
   A) dry bulb temperature and specific humidity decreases
   B) dry bulb temperature increases and specific humidity decreases
   C) dry bulb temperature decreases and specific humidity increases
   D) dry bulb temperature and specific humidity increases

86. One of these chemicals is added in commercial washing powder to keep the dirt suspended in water and is known as "Soil Suspension Polymer"
   A) Sodium silicate   B) Inorganic phosphate
   C) Carboxy-methyl cellulose   D) Sodium perborate

87. Commercial name of epoxy resin is
   A) Araldite   B) Teflon   C) Plexi glass   D) Novolac

88. The permissible limit of pH preferred for potable water is ___ppm.
   A) 6.5-9   B) 7-8.5   C) 10-14   D) 0-7

89. Chemisorption (chemical adsorption) is
   A) Same as "Van Der Waals" Adsorption.   B) Characterized by Adsorption of Heat.
   C) An Irreversible Phenomenon.   D) A Reversible phenomenon

90. Air initially at 101. 3 kPa and 40°C and with a relative humidity of 50%, is cooled at constant pressure to 30°C. The cooled air has a
   A) higher dew point   B) higher absolute (specific) humidity.
   C) higher relative humidity   D) higher wet bulb temperature

91. Which of the following best describes 'brix'?
   A) Percentage of total invert sugars in juice   B) Moisture content in bagasse
   C) Percentage of total soluble solids in juice   D) Percentage of total sucrose in juice

92. During double sulphitation process, the role of the second sulphitation is to:
   A) Remove lime   B) Increase brix
   C) Bleach colour and further clarify juice   D) Remove invert sugars

93. If the mixed juice brix is 16%, bagasse brix is 4%, and bagasse is 30% of cane weight, calculate the approximate undiluted juice lost in bagasse as % of mixed juice brix (ignore water/juice other than brix component):
   A) 5%   B) 7.5%   C) 10%   D) 20%

94. If the pol % in bagasse is high, what does this indicate about the extraction process?
   A) Satisfactory extraction   B) Higher brix in cane
   C) Improved purity   D) Inefficient extraction

95. The effect of over-liming in juice clarification is:
   A) Improved pol %   B) Loss of sugar as calcium saccharate
   C) No effect   D) Small crystal size

96. Why are lead subacetate clarifications used prior to polarimetric determination of pol in cane juice?
   A) To remove reducing sugars
   B) For adjusting temperature
   C) To increase brix
   D) To precipitate colouring matter & other non-sugars

97. What is the main cause of scale formation in cane juice evaporators?
   A) Overuse of lime
   B) Calcium and magnesium salts deposit
   C) Ammonia accumulation
   D) Excessive agitation

98. Raising juice temperature to 75–80°C before and during liming is mainly intended to:
   A) Promote rapid and efficient precipitation of protein colloids
   B) Inhibit thermal microbial activity
   C) Reduce cane juice viscosity for extraction
   D) Increase the solubility of calcium compounds

99. Which process is least likely to cause sucrose inversion?
   A) High temperature in vacuum conditions
   B) Low pH and prolonged heating
   C) Excessive SO_2 application
   D) High pH

100. The parameter 'Java Ratio' is used to compare which of the following?
   A) average sucrose % cane value by an average sucrose % first expressed juice value
   B) Juice pH and sugar crystal size
   C) Brix value and pol % of juice from first mill
   D) Water addition and evaporator efficiency

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Answer key   (46) MANU. CHEMIST & LAB INCHARGE & DY.CHIEF CHEMIST

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	C	26	C	51	C	76	C
2	C	27	D	52	C	77	A
3	D	28	A	53	C	78	A
4	B	29	A	54	A	79	D
5	C	30	D	55	D	80	B
6	B	31	B	56	A	81	C
7	C	32	B	57	B	82	C
8	D	33	A	58	D	83	C
9	C	34	C	59	C	84	A
10	B	35	D	60	A	85	B
11	A	36	C	61	B	86	C
12	C	37	C	62	A	87	A
13	C	38	C	63	C	88	A
14	A	39	C	64	C	89	C
15	D	40	D	65	C	90	C
16	A	41	D	66	B	91	C
17	C	42	D	67	C	92	C
18	D	43	A	68	A	93	B
19	A	44	A	69	A	94	D
20	B	45	B	70	C	95	B
21	B	46	B	71	C	96	D
22	A	47	D	72	B	97	B
23	D	48	C	73	C	98	A
24	B	49	D	74	A	99	D
25	C	50	C	75	A	100	A