

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO

Booklet Serial No. **431561**

Test Booklet Series

**CONSTABLES (TELE COMMUNICATION)
OMR Examination - 2024**



Time Allowed : 120 Minutes

Maximum Marks : 100

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS, ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
 2. Please note that it is the candidate's responsibility to encode and fill in the Roll Number, Booklet Serial No. and Test Booklet Series Code A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer /Response Sheet. Any omission/discrepancy will render the Response Sheet liable for rejection.
 3. You have to enter your Roll Number on the Test Booklet in the Box provided alongside.
DO NOT write anything else on the Test Booklet.
- | | | | | | | | | | |
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4. This Test booklet contains **100** items (questions). Each item comprises of four responses (answers). You will select the response which you want to mark on the Answer Sheet/Response Sheet. In case you feel that there is more than one correct response, mark the response which you consider the appropriate. In any case, choose **ONLY ONE** response for each item.
 5. You have to mark all your responses **ONLY** on the separate Answer /Response Sheet provided. See directions in the Response Sheet.
 6. **All** items carry equal marks.
 7. After you have completed filling in all your responses on the Response Sheet and the examination has concluded, you should hand over to the Invigilator **only the Answer /Response Sheet**. You are permitted to take away with you the Test Booklet and **Candidate's Copy of the Response Sheet**.
 8. Sheets for rough work are appended in the Test Booklet at the end.
 9. While writing Centre Code and Roll No. on the top of the Answer Sheet/Response Sheet in appropriate boxes use **"ONLY BLUE/BLACK BALL POINT PEN"**.
 10. **Penalty for wrong answers:**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY THE CANDIDATE IN THE WRITTEN TEST (OBJECTIVE TYPE QUESTIONS PAPERS).
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, ($\frac{1}{4}$) of the marks assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above for that question.
 - (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

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(Set - A)

1. Choose the correct alternative out of the four.

It was very kind of you to do the washing-up, but you _____ it.

- A) didn't have to do
- B) hadn't to do
- C) mightn't have done
- D) mustn't have done

2. Find out which part of a sentence has an error.

**After knowing truth, (a)/ they took the right decision (b)/ in the matter. (c)/
No error (d)**

- A) a
- B) b
- C) c
- D) d

3. Out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

Prohibited by law or treaty from being imported or exported

- A) contraband
- B) smuggled
- C) counterfeit
- D) forged

4. In the following questions out of the four alternatives, choose the one which best expresses the meaning of the given word.

Inclement

- A) Selfish
- B) Active
- C) Unfavourable
- D) Inactive

5. In the following questions choose the word opposite in meaning to the given word.

Perspicuity

- A) Vagueness
- B) Dullness
- C) Unfairness
- D) Unwillingness

6. Find out which part of a sentence has an error.

If you turn the corner, (a) / you will found a house (b) / built of stone. (c) / No Error (d)

- A) a
- B) b
- C) c
- D) d

7. Fill in the blank.

Everyone in this world is accountable to God _____ his actions.

- A) about
- B) for
- C) to
- D) over

8. Out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

A person who shows off his learning

- A) pedant
- B) educationist
- C) exhibitor
- D) researcher

9. Out of four words, one word is correctly spelt. Find the correctly spelt word.

- A) dysentery
- B) momentary
- C) cemetary
- D) comentary

10. Choose the alternative which best expresses the meaning of the Idiom/ Phrase.

to smell a rat

- A) to smell foul
- B) to see a rat
- C) to chase a rat
- D) to be suspicious

11. Choose the alternative which best expresses the meaning of the Idiom/ Phrase.
To **let off steam**, my friend started murmuring.
- A) to release his tension
 - B) to show his anger
 - C) to show his approval
 - D) to show his displeasure
12. Identify the best way to improve the underlined part of the given sentence.
She is a very good sprinter. I can't run as fast **as she does**.
- A) as she do
 - B) as she doing
 - C) like she is doing
 - D) no improvement
13. Select the word which means the same as the group of words given.
To express in an unclear way
- A) eloquent
 - B) garbled
 - C) lucid
 - D) Intelligible
14. Select the most appropriate option to fill in the blank.
The sky is quite overcast. We're _____ to have rain today.
- A) likely
 - B) mostly
 - C) surely
 - D) certainly
15. Select the most appropriate meaning of the given idiom.
The trouble makers took to their heels when they saw the police coming.
- A) hid themselves
 - B) ran away
 - C) faced them boldly
 - D) prepared to fight

16. Which is the largest city in the Union Territory of Jammu and Kashmir?
- A) Jammu
 - B) Srinagar
 - C) Anantnag
 - D) Leh
17. Which river is primarily allocated to Pakistan under the Indus Water Treaty?
- A) Indus
 - B) Ravi
 - C) Beas
 - D) Sutlej
18. Gulmarg hill station lies in
- A) Aravali Range
 - B) Pir Panjal Range
 - C) Langpangkong Range
 - D) Changkikong Range
19. Which of the following is known as the 'Valley of Shepherds'?
- A) Pahalgam
 - B) Gulmarg
 - C) Sonamarg
 - D) Betaab Valley
20. King Harsha belongs to which dynasty of Kashmir?
- A) Lohara
 - B) Utpal
 - C) Karkot
 - D) Chandella
21. Which of the peak given in the choices is **NOT** one among the top 5 mountain peaks in India?
- A) Trisul
 - B) Kangchenjunga
 - C) Kamet
 - D) Nanda Devi

22. The book titled "Memories Never Die" was published as a tribute to whom?

- A) Abdul Kalam
- B) Atal Bihari Vajpayee
- C) Pranab Mukherjee
- D) Manohar Parrikar

23. Match the following Gold winning Paralympic athletes (Paris 2024) to the sports they were associated with:

- | | |
|--------------------|---------------|
| 1. Avani Lekhara | i. High Jump |
| 2. Praveen Kumar | ii. Archery |
| 3. Nitesh Kumar | iii. Shooting |
| 4. Harvinder Singh | iv. Badminton |

Choose the correct option:

- A) 1-iii, 2-i, 3-iv, 4-ii
- B) 1-i, 2-iii, 3-iv, 4-ii
- C) 1-iii, 2-i, 3-ii, 4-iv
- D) 1-i, 2-iii, 3-ii, 4-iv

24. In which year was English announced as the official language of the Government throughout India?

- A) 1815
- B) 1825
- C) 1835
- D) 1845

25. Who among the given options, had been conferred with the three Padma Awards and the Bharat Ratna Award as well?

- A) Sachin Tendulkar
- B) Bismillah Khan
- C) Amartya Kumar Sen
- D) L.K. Advani

26. Match the following Countries to its currency.

- | | |
|------------|------------|
| 1. Russia | i. Peso |
| 2. Chile | ii. Kyat |
| 3. Georgia | iii. Ruble |
| 4. Myanmar | iv. Lari |

Which of the pairs given above is/are correctly matched?

- A) 1-iii, 2-i, 3-iv, 4-ii
B) 1-iii, 2-i, 3-ii, 4-iv
C) 1-i, 2-iii, 3-iv, 4-ii
D) 1-i, 2-iii, 3-ii, 4-iv

27. The concept of the concurrent list in the Indian Constitution was adopted from the _____.

- A) British Constitution
B) Canadian Constitution
C) Australian Constitution
D) Irish Constitution

28. Match the following Dams to the rivers on which it is situated:

- | Dam | River |
|-------------------|--------------|
| 1. Sardar Sarovar | i. Mahanadi |
| 2. Hirakud | ii. Periyar |
| 3. Bhakra Nangal | iii. Narmada |
| 4. Idukki | iv. Sutlej |

Which of the pairs given above is/are correctly matched?

- A) 1-iii, 2-i, 3-iv, 4-ii
B) 1-iii, 2-i, 3-ii, 4-iv
C) 1-i, 2-iii, 3-ii, 4-iv
D) 1-i, 2-iii, 3-iv, 4-ii

29. Of the following, which is India's highest dam?

- A) Bhakra Nangal Dam
B) Tehri Dam
C) Nagarjuna Sagar Dam
D) Nurek Dam

30. Match the following International organization to its Headquarters.

- | | |
|-------------|------------------------|
| 1. INTERPOL | i. Lyon, France |
| 2. WWF | ii. Montreal, Canada |
| 3. EU | iii. Vaud, Switzerland |
| 4. ICAO | iv. Brussels, Belgium |

Match the above pairs appropriately.

- A) 1-iii, 2-i, 3-iv, 4-ii
B) 1-i, 2-iii, 3-iv, 4-ii
C) 1-i, 2-iii, 3-ii, 4-iv
D) 1-iii, 2-i, 3-ii, 4-iv

31. SAARC Arbitration Council (SARCO) is situated in _____.

- A) India
B) Pakistan
C) Bhutan
D) Bangladesh

32. Match the 2024 Nobel Prize Award winners to their field:

- | | |
|------------------|----------------|
| 1. John Hopfield | i. Chemistry |
| 2. David Baker | ii. Medicine |
| 3. Gary Ruvkun | iii. Physics |
| 4. Han Kang | iv. Literature |

Choose the correct option.

- A) 1-iii, 2-i, 3-iv, 4-ii
B) 1-i, 2-iii, 3-iv, 4-ii
C) 1-i, 2-iii, 3-ii, 4-iv
D) 1-iii, 2-i, 3-ii, 4-iv

33. Match the International newspaper to its base country:

- | | |
|-----------------------|---------------------|
| 1. The Guardian | i. China |
| 2. The People's Daily | ii. Russia |
| 3. El Pais | iii. United Kingdom |
| 4. Kommersant | iv. Spain |

Choose the correct option.

- A) 1-iii, 2-i, 3-iv, 4-ii
B) 1-i, 2-iii, 3-iv, 4-ii
C) 1-i, 2-iii, 3-ii, 4-iv
D) 1-iii, 2-i, 3-ii, 4-iv

34. In which year, Indus Water Treaty was signed?

- A) 1950
B) 1955
C) 1960
D) 1965

35. What was the mascot for the Khelo India Winter Games, 2024?
- A) Snow Leopard
 - B) Musk Deer
 - C) Red Fox
 - D) Golden Eagle
36. If the price of the commodity is increased by 50% by what fraction must its consumption be reduced so as to keep the same expenditure on its consumption?
- A) $\frac{1}{4}$
 - B) $\frac{1}{3}$
 - C) $\frac{1}{2}$
 - D) $\frac{2}{3}$
37. The average weight of a group of seven boys is 56 kg. The individual weights (in kg) of six of them are 52, 57, 55, 60, 59 and 55. Find the weight of the seventh boy.
- A) 45 Kg
 - B) 54 Kg
 - C) 49 Kg
 - D) 58 Kg
38. The number of students in 3 classes is in the ratio of 2 : 3 : 4. If 12 students are increased in each class this ratio changes to 8 : 11 : 14. The total number of students in the three classes in the beginning was
- A) 162
 - B) 108
 - C) 95
 - D) 54
39. A man riding a bicycle covers a distance of 60 km in the direction of the wind and returns back in 8 hours. If speed of the wind is 10 km/hour, find the speed of the bicycle.
- A) 25 km/hour
 - B) 20.5 km/hour
 - C) 20 km/hour
 - D) 30 km/hour
40. (0.08×0.007) is equal to
- A) 0.056
 - B) 0.0056
 - C) 0.00056
 - D) 0.56

41. Determine the number of months required to get Rs. 25.5 as simple interest on Rs. 850 at 3.6% per annum.
- A) 10 months
 - B) 9 months
 - C) 8 months
 - D) 7 months
42. Find the missing number in the following series:
10, 100, 200, 310, ?
- A) 430
 - B) 420
 - C) 410
 - D) 440
43. Find the missing letters in the following sequence in the correct order
abca _ bcaab _ ca _ bbc _
- A) ccaa
 - B) abac
 - C) abba
 - D) bbaa
44. If in a certain language PROSE is coded as PPOQE, how is LIGHT coded in that code?
- A) LIGFT
 - B) LGGHT
 - C) LGGFT
 - D) LLGFE
45. Introducing a woman, a man said, "Her husband is the only son of my father". How is that woman related to the man?
- A) Husband
 - B) Sister
 - C) Wife
 - D) Mother

46. Find the odd one out from the given set of numbers.

14, 28, 35, 46, 56, 84

- A) 56
- B) 84
- C) 35
- D) 46

47. Which group of letters is different from others ?

- A) CBAED
- B) IJHGK
- C) SRQPT
- D) TVWYZ

48. For the Assertion (A) and Reason (R) below, choose the correct alternative

Assertion (A): Simla is colder than Delhi.

Reason (R): Simla is at a higher altitude as compared to Delhi.

- A) Both A and R are true and R is the correct explanation of A.
- B) Both A and R are true but R is NOT the correct explanation of A.
- C) A is true but R is false.
- D) A is false but R is true.

49. The modulator stage in a radio transmitter is normally

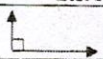
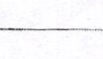
- A) Class-C Amplifier
- B) Class-B push-pull Amplifier
- C) Class-A Amplifier
- D) Class-D Amplifier

50. In television, 4: 3 represents the

- A) Interlace Ratio
- B) Maximum Horizontal Deflection
- C) Aspect Ratio
- D) Ratio of the two diagonals

51. In T.V., the picture signal is
- A) Amplitude modulated and at the low-frequency end of each channel allocation
 - B) Frequency modulated and at the low-frequency end of each channel allocation
 - C) Amplitude modulated and at the high frequency end of each channel allocation
 - D) None of above
52. A PAM signal can be demodulated using
- A) A High pass filter
 - B) A Band pass filter
 - C) A Low pass filter
 - D) None of the above
53. In time-division-multiplexing, each multiplexed signal occupies;
- A) A Fraction of the Transmission Bandwidth
 - B) The Entire Transmission Bandwidth
 - C) A Bandwidth Equal to the Bandwidth of each input signal
 - D) None of the above
54. What will be the upper sideband and lower sideband frequencies for amplitude modulation of a 5-kHz signal with 40-KHz carrier frequency?
- A) 42.5 kHz and 37.5 kHz, respectively
 - B) 45 kHz and 35 kHz, respectively
 - C) 50 kHz and 30 kHz, respectively
 - D) 25 kHz and 15 kHz, respectively
55. In FM to AM conversion, the input of the frequency-modulated signal converted into amplitude modulated signal by _____
- A) Differentiator
 - B) Integrator
 - C) Comparator
 - D) None of the above
56. Pulse amplitude modulation is a process whereby;
- A) The position of the pulse is changed as a function of the sampled value
 - B) The width of the pulse is varied as a function of time
 - C) The height of a pulse is made proportional to the sampled value
 - D) None of the above

57. The amplitude modulation signal without a carrier is known as _____
- SSB-SC
 - DSB-SC
 - Both A and B
 - None of the above
58. Choose the incorrect statement
- SMPS is less sensitive to input voltage variations
 - SMPS is smaller as compared to rectifiers
 - SMPS has low input ripple
 - SMPS is a source of radio interference
59. The magnetic field produced in the stator of a three phase induction motor travels at
- Rotating speed
 - Synchronous speed
 - Asynchronous speed
 - Slip speed
60. Alternating Current (AC) cannot be measured by DC ammeter because:
- Alternating current cannot pass through the DC ammeter
 - Average value of complete cycle is zero
 - Alternating current changes its direction
 - None of the above
61. What is a common use of a Band Pass Filter in Radio Wave Propagation?
- It allows only a specific range of frequencies to pass through
 - It allows all frequencies to pass through
 - It blocks all frequencies from passing through
 - It amplifies all frequencies equally
62. Classify the angle as acute, right, obtuse, straight:

List I	List II
(a) 	(i) Acute
(b) 	(ii) Right
(c) 	(iii) Straight
(d) 	(iv) Obtuse

Match I with II.

- a-ii, b-iv, c-i, d-iii
- a-ii, b-iv, c-iii, d-i
- a-ii, b-i, c-iv, d-iii
- a-ii, b-i, c-iii, d-iv

63. Two statements are followed by four conclusions numbered in I, II, III, IV. You have to take the given statements to be true if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts:

Statements

1. All stars are planets.
2. All planets are trees.

Conclusions

- I. All planets are stars
- II. All stars are trees
- III. All trees are planets
- IV. Some trees are stars

Which of the conclusions follows logically?

- A) Only II and IV follow
- B) Only I and II follow
- C) All follow
- D) Only III and IV follow

64. Match List I with List II and select the correct answer using the codes given below the list

List - I

- i. Monitor
- ii. CPU
- iii. Information

List - II

1. Displays the information in the visual form
2. Processor for controlling and executing instructions
3. Processed data useful for the user

- A) i-1, ii-2, iii-3
- B) i-3, ii-2, iii-1
- C) i-3, ii-1, iii-2
- D) i-1, ii-3, iii-2

65. Which one of the following is not a type of magnetic storage system?

- A) Magnetic tape
- B) Compact disk
- C) Hard disk
- D) Floppy disk

66. Which of the following device is not a media input device to computer?

- A) Microphone
- B) Webcam
- C) Digital Camera
- D) None of the above

67. The functions of operating systems are

- i. Process management
- ii. Memory management
- iii. File management
- iv. Device management

Choose the correct Answer

- A) i, ii, iii
- B) i, iii, iv
- C) i, ii, iv
- D) i, ii, iii, iv

68. Which of the following is not an output device?

- A) Scanner
- B) Plotter
- C) Printer
- D) Projector

69. Which of the following is a spreadsheet application program?

- A) MS Access
- B) MS Word
- C) MS Excel
- D) MS - DOS

70. Match List-I with List-II and Select the correct answer using the codes given below the list

List - I

- i. Operating System
- ii. Input Device
- iii. Output Device

List - II

- 1. Scanning Devices
- 2. Security Management
- 3. Projectors

- A) i-1, ii-2, iii-3
- B) i-2, ii-3, iii-1
- C) i-2, ii-1, iii-3
- D) i-1, ii-3, iii-2

71. Which one of the following is typed in the Run dialog box to access MS Word?

- A) Winword
- B) Word
- C) Msword
- D) Wordprogram

72. _____ is the widely used service of the _____ through which users can send and receive messages in an efficient way. Choose the correct answer to fill in the blanks.

- A) Storage device, computer
- B) Input device, super computer
- C) E-mail, Internet
- D) None of the above

73. What are the options available in-home page of google.com search engine in computer (Mozilla Firebox)?

- I. Google Search
- II. I'm Feeling Lucky
- III. Search Text Box

Choose the correct answer.

- A) I, II
- B) II, III
- C) I, III
- D) I, II, III

74. If the wiring in a building as a 2.4 kW load, what will be the permissible insulation resistance to earth for a 240 V system of supply?

- A) 0.08 M Ω
- B) 0.05 M Ω
- C) 0.02 M Ω
- D) 0.12 M Ω

75. A 3-Phase 440 V, 50 Hz induction motor has 5% slip. The frequency of induced rotor emf will be

- A) 50 Hz
- B) 2.5 Hz
- C) 5 Hz
- D) 2 Hz

76. The permanent wiring systems most preferably used for residential and commercial applications.

- I. CTS
- II. TRS
- III. Cleat
- IV. Conduit

Choose the correct answer.

- A) I, III
- B) II, III
- C) I, II and IV
- D) III

77. The minimum clearance of the High Voltage (HV) line from the ground across the road should be.

- A) 6.1 m
- B) 5.1 m
- C) 3.1 m
- D) 8.1 m

78. If the supply voltage of a 3 - phase induction motor is increased two times, then, torque is

- A) Increased twice
- B) Increased 4 times
- C) Decreased 4 Times
- D) Remain the same

79. At start, the following information is correct for induction motor.

- I. Speed = 0
- II. Slip=0.5
- III. Slip=1
- IV. Slip=0

Choose the correct answer.

- A) I, IV
- B) IV
- C) I and III
- D) I, II

80. Match the term in column-1 with its closest meaning in column-2.

Column-1

- i. Lenz's law
- ii. Electric generator
- iii. High permeability
- iv. Reluctance

Column-2

- 1. Application of electromagnetic induction
- 2. Polarity of induced voltage
- 3. Inversely proportional to permeability
- 4. Easily magnetized

Choose the correct option.

- A) i-2, ii-1, iii-4, iv-3
- B) i-4, ii-2, iii-3, iv-1
- C) i-1, ii-2, iii-3, iv-4
- D) i-3, ii-2, iii-4, iv-1

81. What is the transmission frequency range of FM radio?
- 28 - 58 MHz
 - 88 - 108 MHz
 - 58 - 88 MHz
 - 108 - 128 MHz
82. Consider the following statements:
Statement (I): In AM systems the modulation index ($0 < m < 1$) should be high.
Statement (II): The higher the value of m , the greater the power in the sidebands.
Choose the correct option.
- Both Statement (I) and Statement (II) are individually true and Statement (II) is the correct explanation of Statement (I).
 - Both Statement (I) and Statement (II) are individually true but Statement (II) is not the correct explanation of Statement (I).
 - Statement (I) is true but Statement (II) is false.
 - Statement (I) is false but Statement (II) is true.
83. The correct sequence of subsystems in an FM receiver is:
- Mixer $\rightarrow$ RF amplifier $\rightarrow$ limiter $\rightarrow$ IF amplifier $\rightarrow$ discriminator $\rightarrow$ audio amplifier
 - RF amplifier $\rightarrow$ mixer $\rightarrow$ limiter $\rightarrow$ discriminator $\rightarrow$ IF amplifier $\rightarrow$ audio amplifier
 - RF amplifier $\rightarrow$ mixer $\rightarrow$ IF amplifier $\rightarrow$ limiter $\rightarrow$ discriminator $\rightarrow$ audio amplifier
 - Mixer $\rightarrow$ IF amplifier $\rightarrow$ limiter $\rightarrow$ audio amplifier $\rightarrow$ discriminator
84. Which of the following is **NOT** a method for generating FM?
- By reactance modulator
 - By varactor diode
 - By switching modulator
 - By Armstrong modulator
85. The ionosphere acts as the reflecting surface for the waves in which of the following modes of propagation?
- Ground wave
 - Space wave
 - Sky wave
 - LOS
86. RF carrier 15 kV at 1 MHz is amplitude modulated and modulation index is 0.8. Find the peak voltage of the signal.
- 18 kV
 - 12 kV
 - 18.75 kV
 - 22 kV

87. One of the main functions of the RF amplifier in a superheterodyne receiver is to:
- Permit better adjacent channel rejection
 - Provide improved tracking
 - Increase the tuning range of the receiver
 - Improve the rejection of the image frequency
88. Which of the following statements about the matched filter in a communication receiver are correct?
- It produces ISI.
 - It maximizes the SNR at the detection instant.
 - Its impulse response depends on the signal shape.
 - It may produce signal dispersion.
- Select the correct answer from the codes given below:
- II and III only
 - III and IV only
 - I, II and IV only
 - II, III and IV only
89. Match **List-X** (Modulation/Reception Techniques) with **List-Y** (Disadvantages) and select the correct answer using the codes given below the lists:

List-X		List-Y	
i.	Superheterodyne	1.	Threshold effect
ii.	FM	2.	Granular noise
iii.	PCM	3.	Image frequency interference
iv.	Delta modulation	4.	Quantization noise

Codes:

	i	ii	iii	iv
A)	1	3	4	2
B)	3	1	4	2
C)	1	3	2	4
D)	3	1	2	4

90. Match **List-X** (Frequencies) with **List-Y** (Range) and select the correct answer using the codes given below the lists:

List-X		List-Y	
i.	Audio Frequency (AF)	1.	3 kHz to 300 GHz
ii.	Intermediate Frequency (IF)	2.	20 Hz to 20 kHz
iii.	Radio Frequency (RF)	3.	10 MHz to 108 MHz

Codes:

	i	ii	iii
A)	2	1	3
B)	3	1	2
C)	2	3	1
D)	3	2	1

91. In TV transmission, the picture signal is amplitude-modulated and the sound signal is frequency-modulated. This is done because

- A) it is not possible to frequency modulate the picture signal.
- B) bandwidth requirement is minimized
- C) Sound signal is more susceptible to noise than a picture signal.
- D) synchronization of picture frames becomes easier.

92. The colour TV picture signal is a

- A) single - channel, one - dimensional signal
- B) three - channel, three - dimensional signal
- C) three - channel, one - dimensional signal
- D) single - channel, three - dimensional signal

93. Which of the following statements is correct regarding induction motor?

- A) The power factor of a 1-phase induction motor is high, while the power factor of a 3-phase induction motor is low
- B) 1-phase induction motors produce low starting torque, whereas 3-phase induction motors produce high starting torque
- C) The efficiency of a 1-phase induction motor is more as compared to a 3-phase induction motor
- D) All options A, B and C are correct

94. For a dipole antenna

- A) the current distribution along its length is uniform irrespective of its length
- B) the effective length equals thrice of its physical length
- C) the radiation intensity is maximum along the normal to the dipole axis
- D) the input impedance is independent of the location of the feed point

95. Match **List-X** (Medium type) with **List-Y** (Frequency range) and select the correct answer using the codes given below the lists:

List-X		List-Y	
i.	Open wire	1.	100 KHz
ii.	Twisted pair	2.	100 MHz
iii.	Coaxial cable	3.	5 KHz

Codes:

	i	ii	iii
A)	3	2	1
B)	3	1	2
C)	2	3	1
D)	2	1	3

96. Fill in the blank. "The generation of single sideband suppressed carrier (SSB-SC) signal is done by _____discrimination methods."

- A) Phase
- B) Frequency
- C) Both A and B
- D) None of the above

97. Which of the following best describes interlaced scanning in a picture tube?

- A) Scanning lines progressively from top to bottom in one pass
- B) Scanning odd lines first and then even lines in two passes
- C) Scanning all lines simultaneously in a single pass
- D) Scanning half of the lines in the first pass and the other half in the second pass

98. Match the following terms with their correct descriptions and select the correct answer using the codes given below the lists.

List-X

- i. Progressive scanning
- ii. SSB
- iii. UHF
- iv. Negative picture pulses

List-Y

- 1. Transmits only one sideband of the signal
- 2. Scans each line in sequence
- 3. Frequency ranges from 300 MHz to 3 GHz
- 4. Pulses represent darker areas with higher voltage

Codes:

- | | i | ii | iii | iv |
|----|---|----|-----|----|
| A) | 1 | 2 | 3 | 4 |
| B) | 4 | 1 | 3 | 2 |
| C) | 2 | 1 | 3 | 4 |
| D) | 2 | 4 | 3 | 1 |

99. Which of the following is true about a composite video signal?

- A) It includes audio, colour, and sync information in one signal
- B) It contains only the video component with no sync or color information
- C) It uses only one sideband in the transmission
- D) It is used exclusively in SHF channels

100. Match the following terms with their correct descriptions and select the correct answer using the codes given below the lists.

List-X

- i. VHF
- ii. UHF
- iii. HF
- iv. SHF

List-Y

- 1. Commonly used for FM radio and TV channels
- 2. Used in cellular networks and TV broadcasting
- 3. Mainly used in amateur and shortwave radio
- 4. Often used in satellite communications

Codes:

- | | i | ii | iii | iv |
|----|---|----|-----|----|
| A) | 1 | 3 | 2 | 4 |
| B) | 3 | 4 | 1 | 2 |
| C) | 4 | 3 | 2 | 1 |
| D) | 1 | 2 | 3 | 4 |

