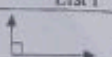


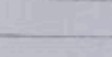


1. In T.V., the picture signal is
  - A) Amplitude modulated and at the low-frequency end of each channel allocation
  - B) Frequency modulated and at the low-frequency end of each channel allocation
  - C) Amplitude modulated and at the high frequency end of each channel allocation
  - D) None of above
  
2. 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
  
3. 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
  
4. 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
  
5. 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
  
6. 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

7. The amplitude modulation signal without a carrier is known as \_\_\_\_\_
- SSB-SC
  - DSB-SC
  - Both A and B
  - None of the above
8. 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
9. The magnetic field produced in the stator of a three phase induction motor travels at
- Rotating speed
  - Synchronous speed
  - Asynchronous speed
  - Slip speed
10. 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
11. 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
12. 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

(Set - C)

13. 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**

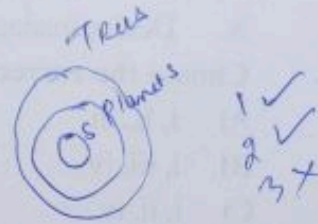
1. All stars are planets.
2. All planets are trees.

**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



14. 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
- 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

**List - II**

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

15. 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

16. 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

[P.T.O.]

17. 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

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

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

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

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

20. 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

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

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

(Set - C)

22. \_\_\_\_\_ 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

23. 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

24. 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 MΩ
- B) 0.05 MΩ
- C) 0.02 MΩ
- D) 0.12 MΩ

$$\frac{240}{2.4} \times 10$$

25. 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

[P.T.O.]

(7)

26. 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

27. 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

28. 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

29. 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

30. 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

(Set - C)

31. What is the transmission frequency range of FM radio?  
 A) 28 - 58 MHz  
 B) 88 - 108 MHz  
 C) 58 - 88 MHz  
 D) 108 - 128 MHz
32. 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.**  
 A) Both Statement (I) and Statement (II) are individually true and Statement (II) is the correct explanation of Statement (I).  
 B) Both Statement (I) and Statement (II) are individually true but Statement (II) is not the correct explanation of Statement (I).  
 C) Statement (I) is true but Statement (II) is false.  
 D) Statement (I) is false but Statement (II) is true.
33. The correct sequence of subsystems in an FM receiver is:  
 A) Mixer → RF amplifier → limiter → IF amplifier → discriminator → audio amplifier  
 B) RF amplifier → mixer → limiter → discriminator → IF amplifier → audio amplifier  
 C) RF amplifier → mixer → IF amplifier → limiter → discriminator → audio amplifier  
 D) Mixer → IF amplifier → limiter → audio amplifier → discriminator
34. Which of the following is **NOT** a method for generating FM?  
 A) By reactance modulator  
 B) By varactor diode  
 C) By switching modulator  
 D) By Armstrong modulator
35. The ionosphere acts as the reflecting surface for the waves in which of the following modes of propagation?  
 A) Ground wave  
 B) Space wave  
 C) Sky wave  
 D) LOS
36. RF carrier 15 kV at 1 MHz is amplitude modulated and modulation index is 0.8. Find the peak voltage of the signal.  
 A) 18 kV  
 B) 12 kV  
 C) 18.75 kV  
 D) 22 kV
- $\frac{15 \times 0.8}{101 \text{ MHz}}$

37. One of the main functions of the RF amplifier in a superheterodyne receiver is to:

- A) Permit better adjacent channel rejection
- B) Provide improved tracking
- C) Increase the tuning range of the receiver
- D) Improve the rejection of the image frequency

38. Which of the following statements about the matched filter in a communication receiver are correct?

- I. It produces ISI.
- II. It maximizes the SNR at the detection instant.
- III. Its impulse response depends on the signal shape.
- IV. It may produce signal dispersion.

Select the correct answer from the codes given below:

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

39. Match List-X (Modulation/Reception Techniques) with List-Y (Disadvantages) and select the correct answer using the codes given below the lists:

List-X

- i. Superheterodyne
- ii. FM
- iii. PCM
- iv. Delta modulation

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

(Set - C)

(10)

List-Y

- 1. Threshold effect
- 2. Granular noise
- 3. Image frequency interference
- 4. Quantization noise



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

**List-X**

- i. Audio Frequency (AF)
- ii. Intermediate Frequency (IF)
- iii. Radio Frequency (RF)

**List-Y**

- 1. 3 kHz to 300 GHz
- 2. 20 Hz to 20 kHz
- 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   |

41. 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.

42. 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

43. 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

(Set - C)

(11)

[P.T.O.]

44. 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
45. Match **List-X** (Medium type) with **List-Y** (Frequency range) and select the correct answer using the codes given below the lists:

<b>List-X</b>	<b>List-Y</b>
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

46. 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

47. 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

48. 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  |

49. 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

50. 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  |

51. 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

52. 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

53. 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

54. 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

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

**Perspicuity**

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

56. 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

57. Fill in the blank.

**Everyone in this world is accountable to God \_\_\_\_\_ his actions.**

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

58. 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

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

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

60. 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

(Set - C)

61. 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
62. 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
63. 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
64. 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
65. 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

66. Which is the largest city in the Union Territory of Jammu and Kashmir?

- A) Jammu
- B) Srinagar
- C) Anantnag
- D) Leh

67. Which river is primarily allocated to Pakistan under the Indus Water Treaty?

- A) Indus
- B) Ravi
- C) Beas
- D) Sutlej

68. Gulmarg hill station lies in

- A) Aravali Range
- B) Pir Panjal Range
- C) Langpangkong Range
- D) Changkikong Range

69. Which of the following is known as the 'Valley of Shepherds'?

- A) Pahalgam
- B) Gulmarg
- C) Sonamarg
- D) Betaab Valley

70. King Harsha belongs to which dynasty of Kashmir?

- A) Lohara
- B) Utpal
- C) Karkot
- D) Chandella

71. 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

IP.T.O.

72. 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

73. 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

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

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

75. 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

(Set - C)



76. 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

77. 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

78. 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

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

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

[P.T.O.]

80. 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

81. SAARC Arbitration Council (SARCO) is situated in \_\_\_\_\_.

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

82. 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

83. 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

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

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

(Set - C)

(20)

87.

88.

89.

90.

(Set - C)

85. What was the mascot for the Khelo India Winter Games, 2024?

- A) Snow Leopard
- B) Musk Deer
- C) Red Fox
- D) Golden Eagle

86. 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)  $\frac{2}{3}$

Handwritten calculations for Q86:  
 $\frac{150}{100} = \frac{3}{2}$   
 $\frac{1}{3} \times \frac{2}{2} = \frac{2}{3}$   
 $35 \frac{23}{9} \frac{1}{10}$

87. 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

Handwritten calculations for Q87:  
 $\frac{56}{110} \frac{55}{110} \frac{52}{110} \frac{57}{110} \frac{55}{110} \frac{60}{110} \frac{59}{110} \frac{55}{110}$   
 $\frac{228+0}{7}$   
 $\frac{52}{57} \frac{55}{60} \frac{59}{55}$   
 $\frac{234567}{3}$

88. 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

Handwritten calculations for Q88:  
 $2:3:4$   
 $8:11:14$   
 $2 \times 12 = 24$   
 $3 \times 12 = 36$   
 $4 \times 12 = 48$

89. 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

Handwritten calculations for Q89:  
 $60 \rightarrow$   
 $\frac{0.007}{1000} \times \frac{0.008}{100}$   
 $\frac{48}{60}$   
 $\frac{108}{108}$

90.  $(0.08 \times 0.007)$  is equal to

- A) 0.056
- B) 0.0056
- C) 0.00056
- D) 0.56

Handwritten calculations for Q90:  
 $0.00056$   
 $8 \times \frac{60}{8} = 7.4$   
 $\frac{7.4}{10} = 0.74$   
 $\frac{0.74}{10} = 0.074$

91. 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

$$P = \left(1 + \frac{R}{100}\right)^T$$

$$850 = \left(1 + \frac{3.6}{100}\right)^T$$

$$\Rightarrow 80 \left(\frac{1036}{100}\right)^T = \frac{425}{10}$$

92. Find the missing number in the following series:

10, 100, 200, 310, ?

- A) 430
- B) 420
- C) 410
- D) 440

$$(10)^2 = 10 \times 10 = 100$$

$$10 \xrightarrow{+90} 100 \xrightarrow{+100} 200 \xrightarrow{+110} 310 \xrightarrow{+120} 430$$

93. Find the missing letters in the following sequence in the correct order

abca\_bcaab\_ca\_bbc\_

- A) ccaa
- B) abac
- C) abba
- D) bbaa

abca<sup>a</sup> bcaab<sup>b</sup> ca<sup>a</sup> bbc<sup>a</sup>

caab caab

94. If in a certain language PROSE is coded as PPOQE, how is LIGHT coded in that code?

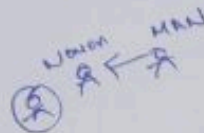
- A) LIGFT
- B) LGGHT
- C) LGGFT
- D) LLGFE

PROSE  
P P O Q E

L I G H T  
L G F F

95. 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



96. 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

Handwritten notes for Q96:  
 $14 \times 2 = 28$   
 $28 \times \frac{5}{4} = 35$   
 $35 \times \frac{4}{5} = 28$   
 $28 \times \frac{3}{2} = 42$   
 $42 \times \frac{2}{3} = 28$   
 $46 \times 2 = 92$   
 $56 \times 2 = 112$   
 $84 \times 2 = 168$

97. Which group of letters is different from others?

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

Handwritten notes for Q97:  
E 10 15 20 25  
S 7 10 13 16  
I 1 4 7 10  
J 2 5 8 11  
H 3 6 9 12  
G 4 7 10 13  
K 5 8 11 14  
C 1 4 7 10  
B 2 5 8 11  
A 3 6 9 12  
S 1 4 7 10  
R 2 5 8 11  
Q 3 6 9 12  
P 4 7 10 13  
T 5 8 11 14

98. 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.

Handwritten notes for Q98:  
S ↑ D ↓  
S ↑ D ↓

99. 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

100. In television, 4: 3 represents the

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