RRB Assistant Loco Pilot and Technician

Model Paper - V

1. **Electric current is a?**
   1) Scalar quantity.
   2) Vector quantity.
   3) Sometimes scalar and sometimes vector.
   4) None of these.

2. **The force between two electrons separated by a distance'*d*' varies as?**
   1) d 2) d^{-1}
   3) d^{-2} 4) d^{2}

3. **Two capacitors of capacitances 10μF and 15μF are connected in series. The total capacitance will be?**
   1) 25μF 2) 10μF
   3) 15μF 4) 6μF

4. **According the Fleming's Right Hand Rule, the middle figure will show the direction of?**
   1) Current.
   2) Magnetic field.
   3) Motion of conductor.
   4) Force.

5. **For the process of electrolysis we require?**
   1) a.c. supply 2) d.c. supply
   3) a.c. or d.c. 4) None

6. **An alternating voltage is given by V = 200 sin 314*t* volt. Its average value will be?**
   1) 120.5 V 2) 130.6 V
   3) 128.5 V 4) 127.4 V

7. **Disadvantage of low power factor is?**
   1) Large KVA rating of equipment required.
   2) Greater conductor size required.
   3) Large copper loss.
   4) All of the above.

8. **In induction type instruments the deflecting torque is**
   1) $T_d \alpha I^2$ 2) $T_d \alpha I$
   3) $T_d \alpha I / I^2$ 4) $T_d \alpha I^3$

9. **A shunt generator delivers 196 A to a terminal voltage of 240 volt, the armature resistance and shunt field resistance are 0.02Ω and 60 Ω respectively. What will be the value of generated e.m.f.?**
   1) 260 Volt 2) 250 Volt
   3) 244 Volt 4) 270 Volt

10. **The speed at which a 6 pole alternator should be driven to generate 60 Hz is?**
    1) 1500 r.p.m. 2) 1000 r.p.m.
    3) 1200 r.p.m. 4) 1400 r.p.m.

11. Which of the following plants have the minimum running cost?
1) Nuclear power plant.
2) Hydropower plant.
3) Thermal power plant.
4) Diesel power plant.

12. H.R.C. fuse provides best protection against?
1) Short circuit.
2) Overload.
3) Open circuit.
4) Reverse current.

13. Lightning arrester is connected?
1) In series with the line.
2) Between line and earth.
3) To a pole near the line.
4) All of the above.

14. Medium head turbine is?
1) Pelton wheel turbine.
2) Francis turbine.
3) Kaplan turbine.
4) All of the above.

15. In transmission of mechanical power from the shaft to another shaft we use?
1) Belt 2) Chains
3) Gear 4) All of the above

16. In a belt drive the driving pulley of 35 cm diameter is running at 250 r.p.m. It requires to drive another pulley 140 cm. in diameter. Determine the speed of the driven pulley? Neglect the thickness and slip of the belt.
1) 80 r.p.m. 2) 70 r.p.m
3) 62.5 r.p.m 4) 50 r.p.m.

17. Application of chain drive is in?
1) Bicycles
2) Motor cycles
3) Coal cutter
4) All of the above

18. Which of the following is not used in measuring perpendicular offsets?
1) Optical square 2) Cross staff
3) Steel tape 4) Line ranger

19. The slope on the road generally provided on the curves is known as?
1) Angle of banking.
2) Angle of reaction.
3) Angle of banking and angle of reaction.
4) Angle of repose.

20. Which hardware was used by first generation computers are related by?
1) Transistors 2) IC's
3) Valves 4) SSI

21. The Centigrade and Fahrenheit scales of temperature are related by?
1) $\frac{C}{180}=\frac{F-32}{100}$ 2) $\frac{F}{9}=\frac{C-32}{5}$

3) $\frac{C}{100}=\frac{F-32}{5}$ 4) $\frac{F}{100}=\frac{F-32}{90}$

22. The refractive index of a medium is equal to?

1) $\frac{\text{Speedof light in vacuum}}{\text{Speedof light in medium}}$

2) $\frac{\text{Speedof light in medium}}{\text{Speedof light in vacuum}}$

3) Speedof light in vacuum×
Speedof light in medium

4) None of these

23. Two plane mirrors are inclined at an angle of 60°. The number of images of a ball placed in between the mirrors will be?

1) 3 2) 6
3) 5 4) 4

24. For electricity, the human body is a?

1) Good conductor
2) Bad conductor
3) Semi conductor
4) None of these

25. In a circuit, 60 coulomb charge flows in one minute, the current in the circuit will be?

1) 5A 2) 3A
3) 2A 4) 1A

26. The perimeter of a certain sector of a circle is equal to half of the circle of which it is a part. The circular measure of the angle of the sector is?

1) 2 2) $\frac{\pi}{2}$
3) $\pi-2$ 4) $\pi+2$

27. Solution of the equation $p^2 + 3p - 10 = 0$ is?

1) (2, –5) 2) (2, 5)
3) (5, –2) 4) (–5, –2)

28. Which of the following is the solution to the equation?
$9m^2 + 3m + 7 = 5m^2 - 23m - 17$?

1) $m = -1$ 2) $m = -2$
3) $m = 2$ 4) $m = 129$

29. If $\sin\theta - \cos\theta = 0$ and $0 < \theta \leq \frac{\pi}{2}$, then θ is equal to?

1) $\frac{\pi}{2}$ 2) $\frac{\pi}{4}$
3) $\frac{\pi}{6}$ 4) 0

30. If $x = \sqrt{6+\sqrt{6+\sqrt{6+\ldots\ldots}}}$ then x is equal to?

1) 3 2) 2
3) –1 4) –2

31. Doctor: Hospital:: ?

1) Plumber: Wrench
2) Chef: Kitchen
3) Water: Reservoir
4) Farmer: Reservoir

32. BADC: XWZY:: QPSR : ?

1) TUVW 2) GHIJ
3) LMON 4) NMPQ

33. 64 : 81 : : 8 : ?

1) 7 2) 8 3) 9 4) 6

Directions (34-36): Find the odd Words / letters/number pair from the given alternatives?

34. 1) University: Vice-Chancellor
2) College: Principal
3) Industry: Chairman-cum-Managing Director
4) Newspaper: Reporter

35. 1) AABE 2) MMNO
3) GGHK 4) KKLO

36. 1) 12-39 2) 16-52
3) 19-61 4) 24-76

37. Arrange the following words as per order in the English dictionary?

1. Activity 2. Attention
3. Arise 4. Absent

1) 4, 1, 3, 2 2) 4, 3, 2, 1
3) 2, 3, 4, 1 4) 3, 2, 4, 1

38. If the day before yesterday was Sunday, when will Thursday be?

1) Today.
2) Tomorrow.
3) Day after tomorrow.
4) Two days after tomorrow.

39. A train 100 m long passes a platform 200 m long in 10 seconds. What is the speed of the train?

1) 110 km/hr 2) 108 km/hr
3) 100 km/hr 4) 90 km/hr

40. Find the area of an equilateral triangle, each of whose side is 6 cm?

1) 20.25 cm^2 2) 18.25 cm^2
3) 15.588 cm^2 4) 17.588 cm^2

41. Find the area of regular octagon with side 2 cm?

1) $(\sqrt{2}+1)cm^2$ 2) $2(\sqrt{2}+1)cm^2$
3) $4(\sqrt{2}+1)cm^2$ 4) $8(\sqrt{2}+1)cm^2$

42. Find the length of the longest rod that can be placed in a room of size 10m × 8m × 6m?

1) $5\sqrt{2}m$ 2) $10\sqrt{2}m$
3) $20\sqrt{2}m$ 4) $15\sqrt{2}m$

43. What length of paper of width 10 cm will be required to make a cone of radius 14 cm and slant height 35 cm?

1) 154 cm 2) 150 cm
3) 160 cm 4) 170 cm

44. A building stands on a horizontal plane. A man on the ground 100 m from the base of the building finds the angle of elevation of the top of

the building to be 30°. What is the height of the building?

1) 56.3 m 2) 59.6 m
3) 57.5 m 4) 60 m

45. $\int x\cos x^2 dx = ?$

1) $\frac{1}{2}\sin x$ 2) $-\frac{1}{2}\cos x^2$
3) $\frac{1}{2}\cos x^2$ 4) $\frac{1}{2}\sin x^2$

46. Mohan is older than Prabir, Suresh is younger than Prabir. Mihir is older than Suresh, but younger than Prabir. Who among the four is the youngest?

1) Prabir 2) Mihir
3) Mohan 4) Suresh

47. If CIGARETTE is coded as CIGERETT, then DIRECTION will be coded as?

1) RIDTCENOI 2) NORTECDII
3) RIDTCEION 4) IRDCTIONE

48. Aman starts walking from his college, walks 10 km towards North, then he turns to his left and walks 10 km. From there he takes a right turn and walks 10 km. In which direction is he facing now?

1) South 2) North
3) East 4) West

49. Two statements are given followed by two conclusions I and II. You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statements. Indicate your answer?

Statements:

1. Teachers are role models of the students.
2. Teachers are responsible for developing scientific attitude in their students.

Conclusions:

I. Students do not have scientific attitude.
II. By and large teachers can influence scientific attitude of the students.

1) Only conclusion I follow.
2) Only conclusion II follows.
3) Both conclusion I and II follow.
4) Neither conclusion I nor II follows.

50. Which of the conclusions can be drawn from the given statement?

Statement:

Many creative persons become artists.

1) A creative person will certainly become an artist.
2) It is not possible to become an artist without creativity.
3) A high level of creativity is needed to become an artist.
4) Some artists are creative persons.

51. Two trains 180 metres and 120 metres in length are running towards each other on parallel tracks, one at the rate 65 km/hour and another at 55 km/hour. In how many seconds will they be clear of each other from the moment they meet?

1) 6 2) 9 3) 12 4) 15

52. If $a^2 + b^2 + c^2 = ab + bc + ca$, then $\frac{a+c}{b}$ is equal to?

1) 1 2) 2
3) 3 4) 4

53. In ΔABC, the internal bisectors of ∠ABC and ∠ACB meet at 'I' and ∠BAC = 50^o. The measure of ∠BIC is?

1) 105° 2) 115°
3) 125° 4) 130°

54. A metallic sphere of radius 10.5 cm is melted and then recast into small cones each of radius 3.5 cm and height 3 cm. The number of cones thus formed is?

1) 140 2) 132
3) 112 4) 126

55. Two numbers 11284 and 7655, when divided by a certain number of three digits, leaves the same remainder. The sum of digits of such a three digit number is?

1) 8 2) 9
3) 10 4) 11

56. Two pipes X and Y can fill a cistern in 24 minutes and 32 minutes respectively. If both the pipes are opened together, then after how much time (in minutes) should Y be closed so that the tank is full in 18 minutes?

1) 10 2) 8
3) 6 4) 5

57. Production of a commodity mostly through the natural process is an activity of?

1) Primary Sector.
2) Secondary Sector.
3) Tertiary Sector.
4) Technology Sector.

58. A part of National Debt known as External Debt is the amount?

1) Borrowed by its citizens from abroad.
2) Lent by its citizens to foreign governments.
3) Borrowed by its government from abroad.
4) Lent by its government to foreign government.

59. Who said "Rama Rajya through Grama Rajya"?

1) Mahatma Gandhi
2)Vinoba Bhave
3) Jayaprakash Narayan

4) Jawaharlal Nehru

60. Where do we find the ideals of Indian democracy in the Constitution?
1) The Preamble 2) Part III
3) Part IV 4) Part I

61. Comptroller and Auditor General of India is appointed by the?
1) Prime Minister 2) President
3) Finance Minister 4) Lok Sabha

62. Which Article of the Indian Constitution directs the State Governments to organise Village Panchayats?
1) Article 32 2) Article 37
3) Article 40 4) Article 51

63. The Attorney General of India has the right of audience in?
1) The Supreme Court.
2) Any High Court.
3) Any Sessions Court.
4) Any Court of Law within India.

64. The capital of the ancient Chola kingdom was?
1) Uraiyur.
2) Kaveripoompattinam.
3) Thanjavur.
4) Madurai.

65. Arrange the dynasties of Delhi Sultanate given below in chronological order?
1. Khilji 2. Tughlaq
3. Sayyad 4. Slave
1) 4, 1, 3, 2 2) 1, 4, 3, 2
3) 1, 2, 3, 4 4) 4, 1, 2, 3

66. Which was the earliest settlement of the Dutch in India?
1) Masulipatnam 2) Pulicat
3) Surat 4) Ahmedabad

67. During British rule, who was instrumental for the introduction of the Ryotwari system in the then Madras Presidency?
1) Macartney.
2) Elphinstone.
3) Thomas Munro.
4) John Lawrence.

68. Who amongst the following was not associated with the Unification of Italy?
1) Cavour 2) Garibaldi
3) Mussolini 4) Mazzini

69. The Greater Himalayas is otherwise called as?
1) Himadri 2) Sahyadri
3) Assam Himalayas 4) Siwaliks

70. The cup-shaped mouth of the volcano is?
1) Focus 2) Epicentre
3) Crater 4) Cinder cone

71. The cool temperate grasslands of South America are known as?
1) Pampas 2) Prairies
3) Veld 4) Savannah

72. Which of the biomes is called the "Bread Basket" of the world?

1) Mid-latitude grasslands.
2) Taiga.
3) Mediterranean.
4) Tropical Savannah.

73. Asia and North America are separated by?

1) Bass Strait 2) Strait of Dover
3) Bering Strait 4) Cook Strait

74. Phototropic movement is controlled by?

1) Auxin 2) Gibberellin
3) Cytokinin 4) Ethylene

75. Lactogenic hormone is secreted by?

1) Mammary glands 2) Placenta
3) Ovary 4) Pituitary

76. An organism which can monitor air pollution is?

1) Bacteria 2) Lichen
3) Algae 4) Fungi

77. In the human body, which of the following organs is responsible for water balance?

1) Heart 2) Liver
3) Kidneys 4) Lungs

78. Chlorophyll containing autotrophic thallophytes is called as?

1) Algae 2) Lichens
3) Fungi 4) Bryophytes

79. Match correctly the insect vectors in List I with the diseases transmitted by them given in List II:

List I

a. Anopheles (female)
b. Culex
c. Sand fly
d. Tse-tse fly

List II

1. Kala-azar
2. Sleeping sickness
3. Filariasis
4. Malaria

1) a-1, b-4, c-2, d-3
2) a-2, b-1, c-4, d-3
2) a-3, b-2, c-1, d-4
4) a-4, b-3, c-1, d-2

80. A white and smooth surface is?

1) Good absorber and good reflector of heat.
2) Bad absorber and good reflector of heat.
3) Good absorber and bad reflector of heat.
4) Bad absorber and bad reflector of heat.

81. When a body is immersed in a liquid, the force acting on it is?

1) Upthrust 2) Weight
3) Mass 4) Both (1) and (2)

82. When two semiconductors of p- and n-type are brought in contact, they form p-n junction which acts like a/an?
1) Conductor 2) Oscillator
3) Rectifier 4) Amplifier

83. The mass of a body measured by a physical balance in a lift at rest is found to be m. If the lift is going up with an acceleration a, its mass will be measured as?
1) $m\left(1-\frac{a}{g}\right)$ 2) $m\left(1+\frac{a}{g}\right)$
3) m 4) zero

84. A computer programming language often used by children is?
1) LOGO 2) PILOT
3) BASIC 4) JAVA

85. Assembler is a program that translates the program from?
1) High level to assembly
2) Assembly to machine
3) Machine to low level
4) Low level to high level

86. 'Table sugar' is which type of sugar?
1) Fructose 2) Galactose
3) Glucose 4) Sucrose

87. An alloy used in making heating elements for electric heating device is?
1) Solder 2) Alloy Steel
3) Nichrome 4) German silver

88. The degree of dissociation of an electrolyte depends on?
1) Dilution.
2) Impurities.
3) Atmospheric pressure.
4) Method of dissolution.

89. The gas causing acid rain in an industrial area is?
1) Carbon dioxide.
2) Carbon monoxide.
3) Sulphur dioxide.
4) Methane.

90. The famous three P's of environmental awareness are?
1) People, Poverty, Politics.
2) Power, Production, Pollution.
3) Population, Politics, Price.
4) Population, Poverty, Pollution.

91. The stagnant water at the bottom of a lake is called?
1) Epilimnion 2) Mesolimnion
3) Metalimnion 4) Hypolimnion

92. Who among the following will take over as the new Chief of the Federal Reserve of the United States on February 1, 2014?
1) Janet Yellen.
2) Wayne May.
3) Daniel Arshack.
4) Chris Lamothe.

93. Who won the Silver Medal for the Women's 400 metre race in the Asian Athletic Championships 2013?

1) Zhao Yanmin.
2) M.R. Poovamma.
3) Tintu Luka.
4) Mayookha Johny.

94. Where is Taksim Square, which witnessed in 2013 prolonged massive protests against the redevelopment of Gezi Park?

1) Ankona 2) Cairo
3) Istanbul 4) Teheran

95. Among the following political leaders of South India, who has not acted in any film?

1) C.N. Annadurai.
2) Jayalalitha .
3) N.T. Rama Rao.
4) M.G. Ramachandran.

96. Which one of the following days is not observed on a fixed date every year?

1) World Environment Day.
2) International Women's Day.
3) International Friendship Day.
4) World Habitat Day.

97. Which one of the following novels was a source of inspiration for the freedom fighters in India?

1) Pariksha Guru 2) Anadmath
3) Rangbhoomi 4) Padmarag

98. Which prestigious award was given in 2013 to Aparajita Datta for her outstanding contribution for the conservation of hornbills?

1) Magsaysay Award.
2) Right Livelihood Award.
3) Whitley Award.
4) Rajiv Gandhi Ecology Award.

99. Who among the following won the Ballon d'Or of FIFA on January 12, 2014 in Zurich?

1) Lionel Messi.
2) Andres Iniesta.
3) Cristiano Ronaldo.
4) Franck Ribery.

100. Which one of the following monuments is the first inhabited World Heritage Monument?

1) Agra Fort 2) Red Fort
3) jaisslmer Fort 4) Amber Fort

Key

1. 1	2. 3	3. 4	4. 1	5. 2
6. 4	7. 4	8. 1	9. 3	10. 3
11. 2	12. 1	13. 2	14. 2	15. 4
16. 3	17. 4	18. 4	19. 1	20. 3
21. 3	22. 1	23. 3	24. 1	25. 4
26. 3	27. 1	28. 3	29. 2	30. 1
31. 2	32. 4	33. 3	34. 4	35. 2
36. 3	37. 1	38. 3	39. 2	40. 3

41. 4	42. 1	43. 1	44. 3	45. 4
46. 4	47. 1	48. 2	49. 2	50. 4
51. 2	52. 2	53. 2	54. 4	55. 4
56. 2	57. 1	58. 3	59. 1	60. 1
61. 2	62. 3	63. 4	64. 1	65. 4
66. 2	67. 3	68. 3	69. 1	70. 3
71. 1	72. 1	73. 3	74. 1	75. 4
76. 2	77. 3	78. 1	79. 4	80. 2
81. 4	82. 3	83. 3	84. 1	85. 2
86. 4	87. 3	88. 1	89. 3	90. 4
91. 4	92. 1	93. 2	94. 3	95. 1
96. 4	97. 2	98. 3	99. 3	100. 3