RRB NTPC Previous Year Paper 06_Solutions

1. (b);
Sol. Scientists have discovered a new bird species named Himalayan Forest Thrush in northeastern India and adjacent parts of China. It has been given scientific name Zoothera salimalii after ornithologist and naturalist Salim Ali who has made significant contributions to ornithology in India.

2. (b);
Sol. Leprosy, also known as Hansen's disease (HD), is a long-term infection by the bacteria Mycobacterium leprae or Mycobacterium lepromatosis.
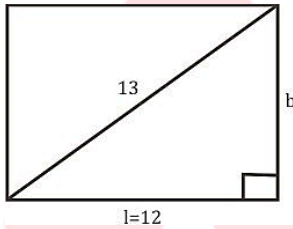
3. (a);
Sol. Rashtrapati Bhavan is not included in world heritage sites.

4. (a);
Sol. $\because$ b = $\sqrt{13^2 - 12^2} \Rightarrow$ b = 5

$\therefore$ Area = l × b = 12 × 5 = 60 m^2

5. (a);
Sol. Rahul Dravid was the coach for U-19 World Cup (2016) held in Bangladesh

6. (b);

7. (a);
Sol. Actual distance = 22.25 × 18.5 = 411.625 km
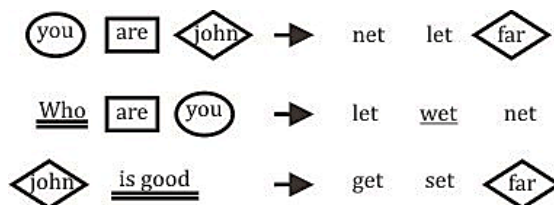
8. (b);
Sol. Silicon valley is a region in the San Francisco. It in the site of technology focused institutions.

9. (a);
Sol. Srikanth Kidambi was conferred the Arjuna Award for badminton in 2015.

10. (d);
Sol.

Code for 'is' → cannot be determined.

11. (b);
Sol. Till the end of 2015, India has established three research stations in Atarctica.

12. (c);
Sol. Length of the train = $60 \times \frac{5}{18} \times 30 = 500m$

13. (b);
Sol. Jantar Mantar, New Delhi, is one of the five observatories built by Maharaja Jai Singh II of Jaipur in the year 1724.

14. (a);
Sol. Only conclusion I follows.

15. (c);
Sol. In terms of area, Madhya Pradesh has the largest forest cover of 77,414 square km in the country, followed by Arunachal Pradesh with 66,964 square km and Chhattisgarh with 55,547 square km.

16. (d);
Sol.9876 + 34.567 – ? = 9908.221 ⇒ ? = 2.346

17. (b);
Sol.

A   B   C
6   3   1

∴ Shae of B = $\frac{3}{10} \times 1800 = 540$.

18. (d);
Sol.cell phone is related to communication. Cycle is related to transportation.

19. (c);
Sol. The Railway Protection Force is a security force, established by an act of Railway Protection Force Act, 1957; enacted by the Indian Parliament "for the better protection and security of railway property".
The force is under the authority of Ministry of Railways (India).

20. (c);
Sol. Nitrous oxide, also known as dinitrogen oxide or dinitrogen monoxide, is a chemical compound with chemical formula N_2O. It is commonly known as laughing gas due to the exhilarating effects of inhaling it. Nitrous oxide is present in the atmosphere where it acts as a powerful greenhouse gas.

21. (b); $(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$
36 = 14 + 2 (ab + bc + ca)
ab + bc + ca = 11

22. (d);
Sol. Pluto is a dwarf planet in the Kuiper belt, a ring of bodies beyond Neptune.

23. (c);
Sol. Biogas comprises primarily methane (CH4) and carbon dioxide (CO2) and may have small amounts of hydrogen sulphide (H2S), moisture and siloxanes.

24. (c);
Sol. Mac OS, operating system (OS) developed by the American computer company Apple Inc. The OS was introduced in 1984 to run the company's Macintosh line of personal computers (PCs).

25. (c);
Sol.+5 series

26. (c);
Sol. LCM of 3, 4, 5 and 6 = 60

$$\begin{array}{r} 60{\overline{\smash{\big)}\,3105\,}}(51 \\ \underline{300} \\ 105 \\ \underline{60} \\ 45 \end{array}$$

∴ Least Number required to be added to 3105 so that it is exactly divisible by 3, 4, 5, and 6
= 60 – 45 = 15

27. (a);
Sol.

	Vessel I			Vessel II	
	M	:	W	M	:	W
Ratio	1	:	3	2	:	1
Parts	$\frac{1}{4}$		$\frac{3}{4}$	$\frac{2}{3}$		$\frac{1}{3}$

New mixture ratio $\left(\frac{1}{4}+\frac{2}{3}\right):\left(\frac{3}{4}+\frac{1}{3}\right)\Rightarrow 11:13$

28. (b);
Sol. The CO_2 extinguishes the fire by attacking fuel, oxygen and heat. It mainly attacks oxygen to extinguish a burning fire. However, in a deep-seated fire CO_2 extinguishes the fire by removing oxygen and decreasing gaseous phase of the fuel.

29. (c);
Sol. Milky way is a galaxy

30. (d);
Sol. After entering Bangladesh, the main branch of Ganga is known as the Padma. The Padma is joined by the Jamuna River, the largest distributary of the Brahmaputra.

31. (a);
Sol.

	P		Q
Efficiency	5	:	7
Days	7	:	5

Solutions (32-34):

32. (c);
Sol. Number of students who like physics but not geometry = 7+8=15

33. (d);
Sol. Students like more than one subject = 5+5+7
$\qquad\qquad$ = 17

34. (b);
Algebra $\qquad$: $\qquad$ Geometry
12 + 5 + 7 $\qquad$: $\qquad$ 13 + 5
24 $\qquad\qquad$: $\qquad$ 18 ⇒ 4 : 3.

35. (b);
Sol.

Sagar is the son of Aniket's wife

36. (b);
Sol.OWL = 15+23+12=50
TIME = 20+9+13+5 = 47

37. (d);
Sol. Ride = 3218
Talk = 7564
Dirt = 4213
Like = 8562
T = 4, l or k = 5 or 6
∴ a = 7

38. (b);
Sol. It is a global navigation satellite system that provides geolocation and time information to a GPS receiver anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites. It can not predict cyclones.

39. (c);
Sol. If the posts of the President and Vice-president fall vacant, Chief Justice of India will act as the President of India.

40. (b);
Sol.$x+y+z = 18×3 = 54 \qquad\qquad$ → (i)
$y+z+m = 14×3 = 42 \qquad\qquad$ → (ii)
& $x+m = 16$
Adding eq^n (i) + (ii)
$\qquad (x+m) + 2 (y+z) =96$
$2 (y+z) = 96–16$
$y+z = 40$
∴ $y+z+m =42$
$m = 42–40=2$
∴ Last number = 2

41. (d);
Sol. E–Y=2
Father = 52
∴ Mother = 52–2 = 50
∴ E = $\frac{50}{2}$ = 25
∴ Y = 25–2=23 years

42. (b);
Sol. 8700 = P + $\frac{P \times 15 \times 3}{100}$
8700 × 100 = 145 P ⇒ P = 6000

43. (a);
Sol. P   I   X   I   E
–1| –1| +0| –1| –1|
 O   H   X   H   D|
  E   L   E   A   N   O   R
–1| –1| –1| +0| –1| –1| –1|
 D   K   D   A   M   N   Q

44. (c);
Sol. Total discount
= $\frac{5}{100} \times (10 \times 12 \times 10 \ + 15 \times 5 \times 12)$
= $\frac{5}{100} \times 12 \times (100 + 75)$
= $\frac{5}{100} \times 12 \times 175$ =105

45. (b);
Sol. Occurring every four years a quadrennial festival or lasting for four years: a quadrennial period.

46. (d);
Sol.

$\overline{L}$
|
–M ——— Brother / Sister
|
N
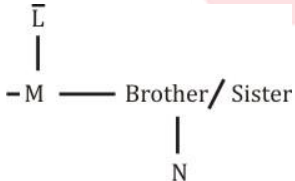
∴ L is grandmother of N.

47. (b);
Sol. $(a + b)^2 - (a - b)^2 = 4ab$
A.T.Q $\frac{(525 + 252)^2 - (525 - 252)^2}{525 \times 252}$
= $\frac{4 \times 525 \times 252}{525 \times 252}$ =4.

48. (d);
Sol. 2 Cos θ = $\sqrt{3}$
Cos θ = $\frac{\sqrt{3}}{2}$
θ = 30°
∴ Cos θ × tan θ = $\frac{\sqrt{3}}{2} \times \frac{1}{\sqrt{3}} = \frac{1}{2}$

49. (a);
Sol. A generator converts mechanical energy into electrical energy, while a motor does the opposite - it converts electrical energy into mechanical energy.

50. (b); (5x + 20x + 10x) = 385 ⇒ x = 11
∴ Total number of notes = 11 × 3 = 33

51. (a);
Sol. Ctrl+V is used for pasting text in MS Word.

52. (b);
Sol. In ascending series
1.9, 3.6, 5.8, 8.4
∴ Median = $\frac{3.6+5.8}{2} = 4.7$

53. (b);
Sol. 4 – 6 + 1 × 15 ÷ 3
= 4 × 6 + 1 – 15 ÷ 3
= 24 + 1 – 5 = 20

54. (b);
Sol. Hypertext Markup Language is the standard markup language for creating web pages and web applications.
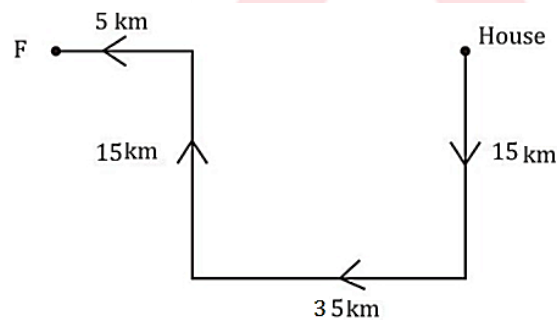
55. (b);
Sol. 1, 2, 3, 4, ….. 10, 11
Mean = $\frac{11+1}{2} = 6$

56. (d);
Sol. National Air Quality Indices for 24 cities. It is determined on the basis of concentration of 8 pollutants.

57. (b);
Sol.

He is (35+5 = 40 km) far from her house.

58. (a);
Sol. Motion of a spinning 'top' is an example of Centripetal Force.

59. (b);
Sol.
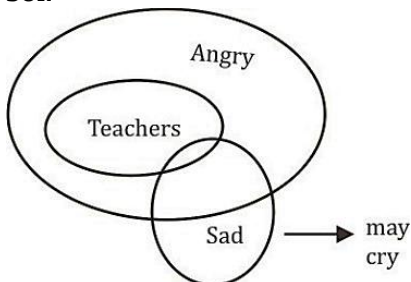
Option (b) follows.

60. (a);
Sol. 24 B 6 E 2 A 9 R 17
⇒ 24−6 ÷ 2 ×9+17
⇒ 24−3×9+17
⇒ 24−27+17
⇒ 41−27 ⇒ 14

61. (d);
Sol. Description Dr.Web is a software suite developed by Russian anti-malware company Doctor Web. First released in 1992, it became the first anti-virus service in Russia.

62. (b);
Sol. The 2016 South Asian Games, officially the XII South Asian Games, is a major multi-sport event which took place from 5 February to 16 February 2016 in Guwahati and Shillong, India.

63. (d);
Sol. The Championship match between Magnus Carlsen and Viswanathan Anand was held from 7 to 28 November 2014 in Sochi, Russia, under the auspices of FIDE.

64. (b);
Sol. Lentil

65. (d); $(a−4)^3$
$= a^3 −64−3a^2(4)+3a(4)^2$
$=a^3−12a^2+48a−64$

66. (a);
Sol.
100% work done by B in —— 40 days ⟍ 1
                                              ⟩ 40
100% work done by B+C —— 8 days ⟋ 5
∴ C alone can do the whole work in
$\frac{40}{(5−1)} = \frac{40}{4} = 10$ days.

67. (b);
Sol. The Lasoong festival is the most popular festival of Sikkim. It is usually celebrated at the end of the tenth Tibetan lunar month (usually December).

68. (a);
Sol. Karagam is a most popular folk dance of Tamil Nadu.

69. (c);
Sol. 95% ------- 1235
110% ------ $\frac{1235}{95} × 110 = 1430$

70. (b);
Sol. 22x – 40 = 207 + 3x
19x = 247 ⇒ x = 13

71. (b);
Sol. Numbers are 4x and 3x
∴ x is HCF = 8
∴ LCM = (4 + 3) × 8 = 12 × 8 = 96

72. (a);
Sol. Intaglio printing is the opposite of relief printing, in that the printing is done from ink that is below the surface of the plate. The design is cut, scratched, or etched into the printing surface or plate, which can be copper, zinc, aluminum, magnesium, plastics, or even coated paper. It is used for printing 'RESERVE BANK OF INDIA' appearing on the face of the Indian currency notes.

73. (a);
Sol. The aim of the Civil Disobedience Movement of 1929 was complete disobedience of the orders of the British Government.

74. (c);
Sol. The Cabinet Mission of 1946 came to India aimed to discuss the transfer of power from the British government to the Indian leadership, with the aim of preserving India's unity and granting it independence.

75. (a);
Sol.

wife = father
          |
Mother = Husband – $\overset{-}{Y}$ = $\overset{+}{Q}$ (Husband)
  |
  R
Q is the paternal uncle of R.

76. (d);

77. (b);
Sol.SUVNE → VENUS
ARMS → MARS
RUJTIPE → JUPITER
APTLE → PETAL
Venus, Mars and Jupiter are planets.

78. (b);
Sol. The Akash ("Sky") is an indigenously designed medium-range mobile surface-to-air missile defense system. The supersonic missile is India's first surface-to-air missile with indigenous seeker to be test fired. The surface-to-air, Akash missile, was test fired from Abdul Kalam Island.

79. (c);
Sol.115% – 920
$120\% - \frac{920}{115} \times 120$ =960

80. (a);
Sol. Baker's yeast is the common name for the strains of yeast commonly used in baking bread and bakery products, serving as a leavening agent which causes the bread to rise (expand and become lighter and softer) by converting the fermentable sugars present in the dough into carbon dioxide and ethanol. It acts as a catalyst for fermentation .

81. (d);
Sol. Area = 456
$\frac{1}{2} \times$ base $\times$ height $= 456$
Base $= \frac{456 \times 2}{24}$ = 38

82. (d);
Sol. Louis Pasteur was known for discovery of Rabies vaccine.

83. (c);
Sol.

$$1^2 \quad 2^2 \quad 3^2 \quad 4^2$$

1, 1, 8, 4, 27, 9, 64, 16, ...

$$1^3 \quad 2^3 \quad 3^3 \quad 4^3$$
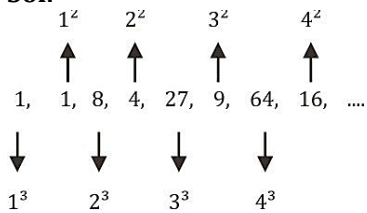
Solutions (84-86): M O J P N K L

84. (c);
Sol.   **85. (c);**
Sol.86. (c);

87. (d);
Sol.

5%

5000   250   5%   1st year

250   12.5   2nd year
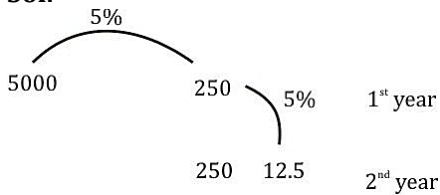
∴ Difference between CI and SI = Rs. 12.50

88. (d); Area $= \frac{1}{2} \times (x + y) \times$ height
$18 = \frac{1}{2} \times (5 + y) \times 3$
$12 = 5 + y \Rightarrow y = 7$ cm

89. (b);
Sol. There are 18 zones in Indian Railways.

90. (c);
Sol. Required value = 610 – 170 = 440

91. (c);
Sol. ABL = 150+500+750+100+175+115=1790
GHL = 170+600+610+130+100+100=1710
MNL=200+550+700+100+100+150=1800
PQL = 200+600+600+110+75+200=1785

92. (b);
Sol. Required value
= (500+600+550+600)–(100+130+100+110)
= 2250 – 440 = 1810

93. (b); $\frac{Sin\theta}{Cos\theta} \times \frac{Cot\theta}{Cosec\,\theta} = \frac{1}{cot\,\theta} \times \frac{Cot\,\theta}{Cos\theta} = \frac{1}{Cosec\,\theta} = Sin\,\theta$

94. (d);
Sol. Neither I nor II follows.

95. (c);
Sol. LIGO-India is a planned advanced gravitational-wave detector to be located in India, to be built and operated in collaboration with the LIGO USA and its international partners Australia, Germany and the UK. The project recently received the in-principle approval from the Indian government.
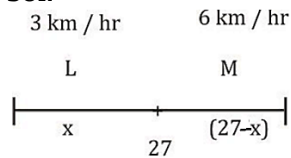
96. (d);
Sol. Neither I nor II follows.

97. (c);
Sol. Ban Ki-moon is a South Korean politician and diplomat who was the the 8th UN Secretary General.

98. (b);
Sol.

3 km / hr   6 km / hr

L   M

x   (27–x)

27

$\frac{x}{3} + \frac{27-x}{6} = 7$

2x + 27 – x = 42 ⇒ x = 15

∴ Distance travelled with M = 27 – 15 = 12 km

99. (b);
Sol. Gregor Mendel, the father of modern genetics, presents his research on experiments in plant hybridization. Gregor Mendel, a 19th century Augustinian monk, is called the father of modern genetics.

100. (d);
Sol. The Burmese Kyat is the currency of Myanmar (Burma).