RRB NTPC Previous Year Paper 20_(Solutions)

S1. Ans.(a);
Sol. Leukemia, a cancer of the blood-forming tissues characterized by a large increase in the numbers of white blood cells (leukocytes) in the circulation or bone marrow.

S2. Ans.(d);
Sol.

$$\sqrt{\frac{0.000000625}{25}} = 0.0005$$

S3. Ans.(c);
Sol. 30 pen and 75 pencils
Pencils cost price = 2
Total cost of pencil = 150
Remaining 390 – 150 = 240 Rs.
Pen cost = $\frac{240}{30}$ = 8 Rs.

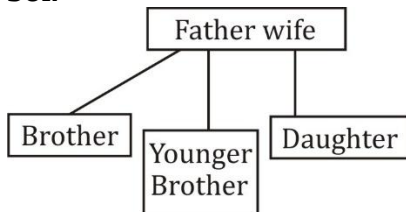**S4. Ans.(d);**
Sol. Region b

S5. Ans.(a);
Sol. Region a

S6. Ans.(b);
Sol. Region c

S7. Ans.(b);
Sol.

S8. Ans.(d);
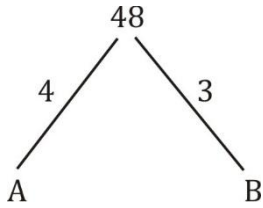**Sol.** The computer mouse and scanner fall under the input device category.

S9. Ans.(d);
Sol. Explorer 1 was the first U.S. satellite and the first satellite to carry science instruments. The satellite was launched on Jan. 31, 1958.

S10. Ans.(a);
Sol.

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         48
       /    \
      4      3
     /        \
    A          B
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Per minutes efficiency = 7
If A had opened for 4 minutes more than
4 × 4 = 16 units of water more would have pored
Total water = 48 + 16 = 64
$$\frac{64}{7}$$
$9\frac{1}{7}$ minutes
≅ 9 minutes 8 seconds

S11. Ans.(a);
Sol. Dhamekh Stupa in Sarnath Uttar Pradesh is one of the most significant Buddhist monuments in India. Built in 249 B.C.E. The stupa bears special significance for devout Buddhist as it marks the 'seat of the holy Buddha' as he proclaimed his faith.

12. Ans.(c);

S13. Ans.(b);
Sol. 1-Samsung
2-Hitachi
3- Godrej
4-Carrier
5-Videocon
6-LG
7-Whirlpool

S14. Ans.(b);
Sol.

S15. Ans.(a);
Sol.

S16. Ans.(b);
Sol. The Durand Line Agreement, demarcating the border between Afghanistan and British India. Signed by Sir Henry Mortimer Durand and Amir Abdur Rahman Khan in Kabul, Afghanistan, November 12, 1893.

S17. Ans.(a);
Sol. Rest other of Natural

S18. Ans.(c);
Sol. Ram Nandan Committee was appointed to identify the creamy layer among the OBCs. It submitted its report in 1993, which was accepted.National Commission for Backward Classes was established in 1993 by an act of Parliament.

S19. Ans.(b);
Sol. Biomagnification is the accumulation of a chemical by an organism from water. Organochlorines (OCs) are a cause of biological magnification.

S20. Ans.(c);
Sol. Some of the Power houses that are associated with Damodar Valley Project are
Mejia Thermal Power Station
Raghunathpur Thermal Power Station
Maithon Power Limited
Durgapur Steel Thermal Power Station
Koderma Thermal Power Station
Durgapur Thermal Power Station

S21. Ans.(b);
Sol. The construction of the Qutub Minar was started by Qitub-ud-Din Aibak, but he only constructed the basement.

S22. Ans.(c);
Sol. Krishnaattam is a temple art in Kerala, India. It is a dance drama and presents the story of Krishna in a series of eight plays and was created by Manaveda, the then Zamorin Raja of Calicut in northern Kerala.

S23. Ans.(b);
Sol. The President appoints Chief Election Commissioner and Election Commissioners. They have tenure of six years, or up to the age of 65 years, whichever is earlier.

S24. Ans.(b);
Sol. Amīr Khusrau is reputed to have invented certain musical instruments like the sitar and tabla. He wrote poetry primarily in Persian.

S25. Ans.(b);
Sol. Time taken = $\frac{400 \times 18}{5 \times 5} = 16 \times 18$ sec
Distance travelled by thief
$= 16 \times 18 \times 10 \times \frac{5}{18} = 800$ m

S26. Ans.(b);
Sol. The Maharashtra Pollution Control Board used the services of The Energy and Resources Institute (TERI) which has developed the oil zapping bacteria. TERI had developed this technique over a period of seven years.

S27. Ans.(a);
Sol. Union Government has released a commemorative postage stamp to mark the Centenary year of Zoological Survey of India (ZSI).

S28. Ans.(c);
Sol. ICICI Bank launches India's first contactless mobile payment solution.

S29. Ans.(c);
Sol. The ozone layer is mainly found in the lower portion of the stratosphere from approximately 20 to 30 kilometres (12 to 19 mi) above earth, though the thickness varies seasonally and geographically.

S30. Ans.(a);
Sol.

S31. Ans.(a);
Sol. 16a, 16b be the numbers
16b – 16a = 16
Going through options
Numbers are 64, 80.

S32. Ans.(d);
Sol. $20\% = \frac{1}{5} \Rightarrow 1584 \rightarrow 6$
$\frac{1584}{6} \times 5 = 264 \times 5 = 1320$

S33. Ans.(d);
Sol. Prithvi Raj Singh of Jal Bhagirathi Foundation was on 14 November 2015 elected to Board of Governors of World Water Council (WWC) for 2016-18.

S34. Ans.(d);
Sol. The structure of the lung maximizes its surface area to increase gas diffusion. Because of the enormous number of alveoli (approximately 300 million in each human lung), the surface area of the lung is very large (75 m²).

S35. Ans.(b);
Sol. M → 7   T → 2
O → 1   A → 5
B → 3   B → 3
I → 6   L → 9
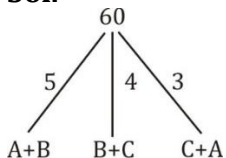L → 9   E → 4
E → 4   T → 2
B → 3
A → 5
L → 9
L → 9
E → 4
T → 2

36. Ans.(b);
Sol.

A + B + B + C + C + A = 12
A + B + C = 6
A = 2
$\frac{60}{2} = 30 \, days$

S37. Ans.(b);
Sol. The Hindustan HF-24 is an Indian two-seat primary trainer designed and built by Hindustan Aeronautics Limited. The HF-24 was the first company design to enter production in 1953 for the Indian Air Force and Navy, where it replaced the de Havilland Tiger Moth.

S38. Ans.(a);
Sol. $\frac{18}{27} = 0.667$

S39. Ans.(d);
Sol. tan 45° = 1

S40. Ans.(a);
Sol. Jan   Feb   March
5000   10000   15000
Total = 30000
Average = 10000 Rs.

S41. Ans.(c);
Sol. $\frac{4 \times 5}{5-4}\left(\frac{15}{60}\right) = 5\ km$
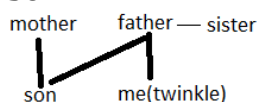
S42. Ans.(a);
Sol. "The pocket of the Indian President is bigger than that of the American President" remarks the power of the Indian President not to take any action (either positive or negative) on the bill for an indefinite period.
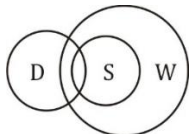
S43. Ans.(b);
Sol.

S44. Ans.(c);
Sol.

S45. Ans.(a);
Sol.

I. √
II. ×

S46. Ans.(d);
Sol.
$\frac{40 \times 10 + 30 \times 12}{70} = \frac{400 + 360}{70}$
10.85

S47. Ans.(b);
Sol.

Father
|
[Mother] → Preeti
|
His
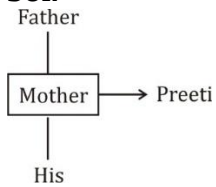
48. Ans.(d);
Sol. Blue litmus paper turns red under acidic conditions and red litmus paper turns blue under basic or alkaline conditions, with the color change occurring over the pH range 4.5–8.3 at 25 °C .

S49. Ans.(c);
Sol. The first India International Science Festival (IISF) has started at the Indian Institute of Technology (IIT)-Delhi campus on December 4, 2015. It is being organised during December 4 to 8.

S50. Ans.(c);
Sol. Apple : Banana = A : 1
Banana : Apple = B : 1
$\frac{Apple}{Banana} + \frac{Banana}{Apple} = A + B$
$A + \frac{1}{A} = more\ than\ 1$

S51. Ans.(c);
Sol. $3 \times 2 - 1 = 5$
$5 \times 2 - 2 = 8$
$8 \times 2 - 3 = 13$
$13 \times 2 - 4 = 22$
$22 \times 2 - 5 = 39$

S52. Ans.(d);
Sol. The first development flight of the GSLV was launched on 18 April 2001 was a failure as the payload failed to reach the intended orbit parameters. The launcher was declared operational after the second development flight successfully launched the GSAT-2 satellite.

S53. Ans.(d);
Sol. ? + 4 + 5 + 6 = 11 + 9 + 3 + 7
? = 15

S54. Ans.(c);
Sol. $\frac{18}{60 \times 60 \times 2} = \frac{1}{400}$

S55. Ans.(b);
Sol. $615 = \frac{6 \times 5 \times x}{100}$
$x = \frac{615}{6 \times 5} \times 100 = 2050$ Rs.

S56. Ans.(b);
Sol.

S57. Ans.(a);
Sol. $40x^2 = 734^2 - 234^2$
$40x^2 = (500)(968)$
x = 110

S58. Ans.(b);
Sol. Muscles can break down carbohydrates anaerobically to provide energy, resulting in a compound called pyruvate. When oxygen is available, pyruvate can be further broken down aerobically to provide more energy. But when sufficient oxygen is not available, pyruvate is converted into lactic acid.

S59. Ans.(b);
Sol. Anthocyanins are water-soluble flavonoid pigments that appear red to blue, according to pH.
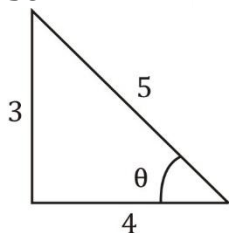
S60. Ans.(b);
Sol. Decomposition is a chemical reaction where a single substance breaks into two or more simple substances when heated. The reaction is usually endothermic because heat is required to break the bonds present in the substance.

S61. Ans.(b);
Sol. "Dreaming Big: My Journey to Connect India" is authored by Sam Pitroda.

S62. Ans.(b);
Sol.

4 sin θ = 3 cos θ
tan θ = $\frac{3}{4}$
Sec θ = $\frac{5}{4}$
cosec θ = $\frac{5}{3}$
Sec θ.cosec θ = $\frac{25}{12}$

S63. Ans.(a);
Sol. OMNO

S64. Ans.(b);
Sol. Yakshagana is one of the most popular folk theatre forms of Karnataka. It is noted for its music, colourful costumes, vigorous dance movements, subtle expressions and extempore dialogues.S.

S65. Ans.(c);
Sol. Dynamite- Alfred Nobel
Dynamo- Michael Faraday
Electron- J.J. Thomson
Proton – Rutherford

S66. Ans.(c);
Sol. Solar water heating is the conversion of sunlight into heat for water heating using a solar thermal collector. Solar energy systems/power plants do not produce air pollution, water pollution, or greenhouse gases.

S67. Ans.(b);
Sol. $400 \left(1 + \frac{1}{20}\right)^2 = 441 \, Rs.$

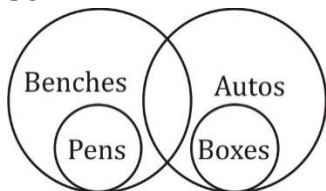**S68. Ans.(d);**
Sol.

S69. Ans.(a);
Sol. LAN has highest data rate which ranges from 100 to 1000 Mbps. The high speed of LAN is also due to its short range. MAN has second highest speed which ranges from Kbps to 500 Mbps.

S70. Ans.(d);
Sol. $15 \times 2^3 - 30 \times 2^2 + 12 \times 2 - 12 =$
$120 - 120 + 24 - 12 = 12$

71. Ans.(a);
Sol.

I – Can't say
II – Can't say
III – Can't say

S72. Ans.(b);
Sol. Indian has the largest area under sugarcane crop in the World.

S73. Ans.(b);
Sol. Diameter

S74. Ans.(a);
Sol.

S75. Ans.(a);
Sol. Convex mirrors are commonly used as rear-view (wing) mirrors in vehicles because they give an erect, virtual, full size diminished image of distant objects with a wider field of view.
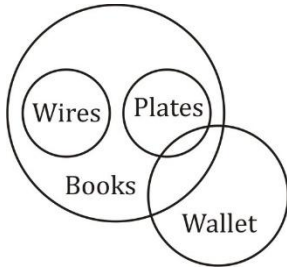
S76. Ans.(d);
Sol. All of the three options are under the objectives of Indian space programme .

S77. Ans.(b);
Sol. All other are opposite pair

S78. Ans.(b);
Sol.

I. ×
II. √
III. √

S79. Ans.(b);
Sol. All other are humans but paddy is crop.

S80. Ans.(a);
Sol. $\frac{x \times 120}{100} = 84$
x = 70 Rs.

S81. Ans.(c);
Sol. 17.5 → 2.45
Advertisement + taxes + research & development →
15 + 10 + 5 = 30
$30 \to \frac{2.45}{17.5} \times 30$
= Rs. 4.2 crores

S82. Ans.(d);
Sol. 20 + 12.5 : 10 + 17.5
32.5 = 27.5
13 : 11

S83. Ans.(d);
Sol. 15 → 2.10 crores
Transport – Taxes = 12.5 – 10
$2.5 \to \frac{2.10}{15} \times 2.5$
$= \frac{7 \times 5}{100} = 35$ lakhs

S84. Ans.(b);
Sol. Net Discount = $-10 - 15 + \frac{15 \times 10}{100} = -25 + 1.5$
Discount = –23.5%
$= \frac{76.5}{100} \quad \frac{-SP}{-MP}$
SP → 76.5 × 20 = 1530 Rs.
Net cost = 1530 + 70 = 1600 Rs.
Profit $= \frac{400}{1600} \times 100 = 25\%$

85. Ans.(d);
Sol. Stanislas Wawrinka is a Swiss professional tennis player.

S86. Ans.(a);
Sol. The epidermis, the outermost layer of skin, provides a waterproof barrier and creates our skin tone.

S87. Ans.(b);
Sol. |915 – 364| = 551
|543 – 789| = 246
|863 – 241| = 622

S88. Ans.(a);
Sol. The Indian National Army (INA) was originally founded by Caption Mohan Singh in Singapore in September 1942 with Japan's Indian POWs.

S89. Ans.(a);
Sol. $x^2 - 6x + 8 = (x - 4)(x - 2)$

S90. Ans.(b);
Sol. $87375 - 125 = 87250$
$\frac{87250}{698} = 125$

S91. Ans.(b);
Sol. Android is a mobile operating system developed by Google.

S92. Ans.(a);
Sol. H → 7
I → 3   C → 1
S → 2   I → 3
T → 6   V → 5
O → 8   I → 3
R → 4   C → 1
Y → 5 S → 2
V → 5
I → 3
S → 2
I → 3
T → 6
O → 8
R → 4

S93. Ans.(b);
Sol. 20 pencils → 6 Rs.
16 pencils → 6 Rs.
CP 80 pencils → 24 Rs.
SP 80 pencils → 30 Rs.
$\frac{6}{24} \times 100 = 25\%$

S94. Ans.(b);
Sol. 1, 2, 3 LCM = 6 hours

S95. Ans.(c);
Sol. a : b = 1 : 3
b : c = 1 : 2
a : b : c = 1 : 3 : 6
a = 2
b = 6
c = 12

S96. Ans.(b);
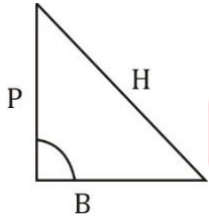**Sol.** SINK = ISKN
MINT = IMTN
97. Ans.(b);
Sol. Singh is best known for carrying out an assassination as a revenge for the Jallianwala Bagh massacre in 1919. Udham Singh was a Punjab revolutionary and freedom fighter who assassinated Michael O' Dwyer, the former Lieutenant Governor of the Punjab in India as a revenge of Jallianwala Bagh massacre.

S98. Ans.(b);
Sol.

S99. Ans.(a);
Sol.

P = x ,   b = x – 2
h = x + 2
$(x + 2)^2 = x^2 + (x - 2)^2$
$x^2 + 4 + 4x = x^2 + x^2 + 4 - 4x$
$8x = x^2$
$x = 8cm$, base = 6cm

S100. Ans.(b);
Sol. Kapil Dev, also known as the Haryana Hurricane, was born 6th January, 1959 in Chandigarh. Kapil Dev played his first competitive game of cricket at the age of 13.