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COACHING**

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keep pushing forward!*



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## Railway Group D

# Solution

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## General Science & General Awareness

- Ans.1(A)** Mohenjo Daro is situated in the district of Larkana in Sindh State.
- Ans.2(B)** White blood corpuscles - Its main function is protecting the body from the disease.
- Ans.3(C)** Bahadur Shah was known as the Muazzam.
- Ans.4(C)** Rouff is a popular folk dance of Kashmir.
- Ans.5(B)** Raziya was the first lady ruler of Sultanat period. Iltutmish is said to have nominated his daughter Raziya as his heir.
- Ans.6(C)** Candela is the unit of Luminous intensity.  
Temperature - Kelvin  
Electric Current - Ampere  
Power - Watt
- Ans.7(D)** On 29 August, 1947, the Constituent Assembly set up a Drafting Committee under the Chairmanship of Dr. B.R. Ambedkar to prepare a Draft Constitution for India.
- Ans.8(B)** The hypothalamus works with other parts of the body's temperature-regulating system, such as the skin, sweat glands and blood vessels.
- Ans.9(C)** The chairman and members of the Commission hold office for a term of six years or until they attain the age of 65 years, whichever is earlier.
- Ans.10(A)** Ordinances are issued by the President when the Parliament is not in session.
- Ans.11(A)** Article 32 of constitution is related to fundamental rights.
- Ans.12(B)** Professor Urbasi Sinha is a faculty member in the Light and Matter Physics theme at the Raman Research Institute (RRI).  
She was awarded the Gates-Cambridge Impact Prize 2025 by the Bill & Melinda Gates Foundation at Cambridge, UK.  
Prof. Sinha is among eight winners of the Gates-Cambridge Impact Prize to celebrate its 25th anniversary.  
She heads the Quantum Information and Computing (QulC) lab at RRI, an autonomous institute under the Department of Science and Technology.  
The QulC lab was one of the first in India to manufacture and use heralded and entangled photon sources for quantum applications.  
Prof. Sinha received the prestigious Rashtriya Vigyan Yuva Puraskar from the Government of India.  
She played a leading role in establishing the Open Quantum Institute (OQI), launched at CERN in March 2024.  
Prof. Sinha is an affiliate member of the Institute for Quantum Computing, Waterloo, Canada, and the Centre for Quantum Information and Quantum Computing, University of Toronto.
- Ans.13(D)** Corundum is a mineral of
- Ans.14(C)** Dr. Jitendra Singh inaugurated India's first-of-its-kind CSIR Mega "Innovation Complex" in Mumbai in January, 2025.  
The Innovation Complex is spread over nine floors and includes 24 "ready-to-move" incubation labs, office, and networking spaces.  
The facility aims to support StartUps, MSMEs, and industry stakeholders by providing scientific infrastructure, expertise, and regulatory support.  
It serves as a hub for collaboration between CSIR labs, start-ups, MSMEs, and industry to address

real-world challenges and contribute to Atmanirbhar Bharat.

The Innovation Complex is designed to accelerate tech-transfer processes and provide regulatory support for compliance in various sectors.

**Ans.15(B)**

**Ans.16(D)**

**Ans.17(C)**

**Ans.18(D)**

Capital of Mauritania is Nouakchott.

Quantity demanded at a certain price during any particular period of time

**Ans.19(B)**

**Ans.20(A)**

**Ans.21(D)**

Shri Ashwini Vaishnaw, Union Minister for Railways, Information & Broadcasting, and Electronics & Information Technology, will participate in the World Economic Forum (WEF) 2025 at Davos.

Shri Vaishnaw emphasized India's significant strides in ensuring development for all sections of society, particularly the historically marginalized.

The discussions at WEF 2025 will focus on inclusive growth, investment in social, physical, and digital infrastructure, and democratizing technology.

India's participation in WEF 2025 aims to strengthen partnerships, attract investment, and position India as a global leader in sustainable development and technological innovation.

**Ans.22(A)**

**Ans.23(C)**

**Ans.24(A)**

Prime Minister Narendra Modi welcomed the renaming of the Cultural Center in Jaffna, Sri Lanka, built with Indian assistance, as the 'Thiruvalluvar Cultural Center'.

The renaming is in honour of Tamil philosopher, poet, and thinker Thiruvalluvar.

PM Modi highlighted that the renaming pays homage to Thiruvalluvar and signifies the deep cultural, linguistic, historical, and civilisational bonds between India and Sri Lanka.

The Indian Embassy in Sri Lanka announced the renaming of the Cultural Center in Jaffna as the 'Thiruvalluvar Cultural Center'.

On Thiruvalluvar Day (January 15), PM Modi remembered Thiruvalluvar, acknowledging his verses as reflections of Tamil culture and the nation's philosophical heritage.

The renaming celebrates the shared heritage and strong ties between the people of India and Sri Lanka.

Indian Ocean

Second

**Ans.25(A)**

**Ans.26(B)**

**Ans.27(B)**

**Ans.28(C)**

**Ans.29(C)**

Arunachal Pradesh was established as a state in India on February 20, 1987. Arunachal Pradesh was initially a Union Territory which was carved out of Assam.

**Ans.30(A)**

The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, ozone, and Chlorofluorocarbons.

**Ans.31(A)**

**Ans.32(B)**

**Ans.33(C)**

**Ans.34(A)**

Energy  
Binary  
Boxing  
Electromagnetic waves do not show interference and diffraction.

- Ans.35(D)** Uniform  
**Ans.36(A)** H.C. Urey and E.W. Washburn  
**Ans.37(B)** Rete Testis  
**Ans.38(C)** Melting  
**Ans.39(B)** Bases  
**Ans.40(C)** The salivary glands present in mouth secrete salivary amylase enzyme which digests the starch present in food into sugar. Digestion of starch or carbohydrate starts in mouth itself. Therefore, amylase is the first enzyme that helps in the process of digestion.

- Ans.41(B)**  $1.6 \times 10^{19}$  C  
**Ans.42(B)** Boiling occurs when the temperature of the liquid is greater than the boiling point of the substance. Evaporation can occur at any temperature.

- Ans.43(C)**  
**Ans.44(C)** The process of releasing energy from food is called respiration. The energy is stored in the form of ATP (Adenosine tri phosphate) in the body cells which is used for various purposes like contraction of muscles, conduction of nerve impulses, synthesis of proteins and many other activities related to the functioning of cells. Therefore, ATP is known as the energy currency of cells.

**Ans.45(D)**

## Mathematics

- Ans.46(A)** Average = (Total number of the persons)/(Number of years)  
 $= 2315/6 = 385.84$

- Ans.47(B)**  $= (431 - 228)/228 \times 100 = 89.03\%$

- Ans.48(B)** In 2001 the number of person = 830  
 And in its previous year 2000 = 522  
 $830 - 522 = 308$

- Ans.49(B)**  $999\frac{4}{7} + 999\frac{1}{7} + 999\frac{2}{7} = 3 \times 999 + (\frac{4}{7} + \frac{1}{7} + \frac{2}{7})$   
 $= 2998$

- Ans.50(D)**  $a + \frac{1}{a} = 4$   
 Squaring both side  
 $a^2 + \frac{1}{a^2} = 14$   
 After squaring again  
 $a^4 + \frac{1}{a^4} = 194$

- Ans.51(A)**  $578 = 17_2 \times 2$   
 $245 = 7^2 \times 5$   
 To get one zero, we need a pair of 2 and 5, after that 289 and 49, when they are multiplied we will get 1 as unit digit. So, new number is 10.

- Ans.52(B)**  $P^2 = \frac{1080 \times 100 \times 100}{140 \times 85.71} = 900$   
 $P = \pm 30$

- Ans.53(B)**  $\sqrt{\{54 + (45 + 92) - 29\} \div 2}$   
 $= \sqrt{(54 + 137 - 29) \div 2} = \sqrt{162 \div 2}$   
 $\sqrt{x} = \sqrt{81}$   
 $X = 81$

- Ans.54(B)** Average can be found out by summing up all these numbers and dividing by 6.  
 But here it may become tedious; here we have to adopt deviation method.  
 Here we have to assume a number that is easier for calculation and assume it as average, and then we will calculate the deviation of each number from the assumed average and find the average of deviation and either add or subtract from the assumed average.

Let us assume the average to be 2085, then

2095	→	$2095 - 2085 = 10$
2091	→	$2091 - 2085 = 6$
2077	→	$2077 - 2085 = -8$
2073	→	$2073 - 2085 = -12$
2097	→	$2097 - 2085 = 12$

Sum of the deviations =  $10 + 4 + 6 - 8 - 12 + 12 = 12$

Average of deviation =  $12/6 = 2$

Hence the average =  $2085 + 2 = 2087$

- Ans.55(A)** Product of the numbers is equal to the product of their HCF and LCM. Hence  
 $37840 \times 113400 = 7560 \times \text{number}_2$   
 $\text{Number}_2 = 56700$

**Ans.56(C)**

$$\begin{array}{r}
 1 \\
 1980 \overline{) 20790} \\
 \underline{1980} \phantom{0} \\
 990 \phantom{0} \\
 \underline{1980} \\
 0
 \end{array}$$

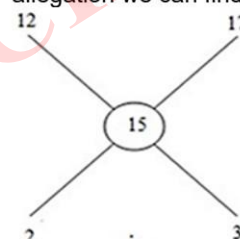
Now  $x = 990 \times 2 = 1980$

Then  $N_2 = 1980$

And  $N_1 = 1980 \times 10 + 990 = 20790$ .

- Ans.57(D)** Now calculating the interest %  
 $= 30255/201700 \times 100 = 15\%$

Now given interests are 12% and 17% Applying allegation we can find the ratio of the principals



Therefore principal ratios are 2:3

Money invested at 17% pa =  $(201700/5) \times 3$   
 = Rs.121020

- Ans.58(A)** Now he has 8 candies left after giving 60% then just before this he would have  
 $8/40 \times 100 = 20$  candies  
 But he gave away 2 more candies, then total  
 $= 20 + 2 = 22$

Before this he gave away 89% of the remaining means this amount of 22, is 11% of the remaining. Then the original amount will be  
 $22/11 \times 100 = 200$  Candies

But this 200 is left out after giving away 60%, then originally he has  
 $= (200/40) \times 100 = 500$

- Ans.59(A)** In Cuboid if length increases by  $x\%$ , breadth by  $y\%$ , height by  $z\%$ , then % increase in volume is

$$= x + y + z + \frac{xy + yz + zx}{100} + \frac{xyz}{100^2}$$

Using this formulae we will get % increase in volume is 17.81%

- Ans.60(A)** If he divides among his sons then produce will be  
 $= 1 + 9 + 25 + 49 = 84$

Head he done then =  $1 + 3 + 5 + 7 = 16$

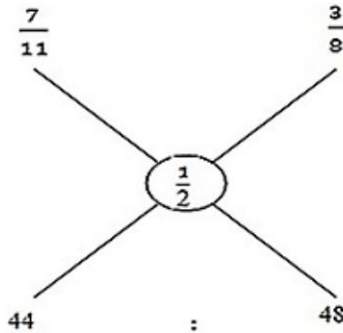
His produce will be =  $16^2 = 256$

Loss =  $256 - 84 = 172$

Then he will earn if he does himself

=  $6020/172 \times 256 = 8960$

- Ans.61(C)** Applying allegation



**Ans.62(D)**  $11 : 12$   
 Cost price of cow in which there is loss of 14.28%  
 $= 2100/85.72 \times 100 = 2450$  approx  
 Cp of the cow in which he has a profit of 20%  
 $= 2100/120 \times 100 = 1750$

Total SP = 4200  
 And total CP = 4200  
 Hence no loss and no gain.

**Ans.63(A)** SP = CP + Profit  
 $= 13SP = 13CP + 3 CP$   
 $= 13SP = 16CP$   
 $= sp/cp = 16/13$

Then profit% =  $3/13 \times 100 = 23\%$

**Ans.64(A)**  
**Ans.65(C)** Let us consider the total unit of work as = 20 units

Mans' 1 day work =  $20/10 = 2$   
 Women 1 day work =  $20/20 = 1$

Now men with 60% efficiency will do in 1 day  
 $= 60/100 \times 2 = 6/5$  unit work

Now women with 50% efficiency will do  $1/2$  unit work

So both working together in 1 day will do  $6/5 + 1/2$   
 $= 17/10$  unit work

So to complete 20 unit work they will take  
 $= 20 / (17/10) = 200/17$  days.

**Ans.66(A)** Let the speed of the boat be x then  
 $48/(x+4) + 48/(x-4) = 9$

Going through the options  
 $x = 12$  value satisfy the equation.

**Ans.67(A)** Let the speeds of the train be 7x and 11x  
 Then their lengths will be 84x and 198x  
 Time required will be  $(84x+198x)/4x = 282/4 = 70.5$ sec

**Ans.68(D)**  
**Ans.69(B)** SI =  $ptr/100$   
 $p/42 = (p \times t \times 25/7)/100$

On solving we get  $4/6$  year or 8 months

**Ans.70(C)**  $5 \times A = 2 \times B = 7 \times C = k$   
 $A = k/5 \quad B = k/2 \quad C = k/7$

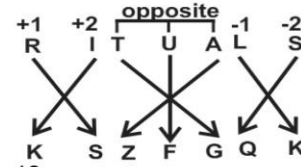
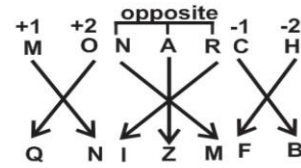
If we consider  $k = 70$   
 Then A : B : C = 14 : 35 : 10

Time ratio = 5 : 2 : 7  
 Hence profit ratio = 70 : 70 : 70 = 1 : 1 : 1

## General Intelligence and Reasoning

**Ans.71(B)**  $416 \times 9 + 35 - 5 \div 31 = ?$   
 According to the question-  
 $416 - 9 \times 35 + 5 \div 31 = ?$   
 $= 416 - 9 \times 7 + 31$   
 $= 416 - 63 + 31$   
 $= 384$

**Ans.72(C)**



**Ans.73(A)**

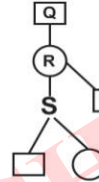
**Ans.74(C)**

**Ans.75(B)**

12  
 @ \$ & >



**Ans.76(C)**



**Ans.77(D)**

**Ans.78(C)**

**Ans.79(D)**

**Ans.80(B)**

**Ans.81(D)**

15342  
 Lonely  
 $6 \rightarrow (6)^3 \rightarrow 216 \rightarrow 2+1+6 \rightarrow 9$   
 $8 \rightarrow (8)^3 \rightarrow 512 \rightarrow 5+1+2 \rightarrow 8$   
 $7 \rightarrow (7)^3 \rightarrow 343 \rightarrow 3+4+3 \rightarrow 10$   
 $11 \rightarrow (11)^3 \rightarrow 1331 \rightarrow 1+3+3+1 \rightarrow 8$

**Ans.82(C)** Except option (c), all days are held on July month while World blood donor day held on June month.

**Ans.83(B)**

$48 \rightarrow (4 \times 8) \rightarrow 32$   
 $63 \rightarrow (6 \times 3) \rightarrow 17$   
 $98 \rightarrow (9 \times 8) \rightarrow 72$   
 $49 \rightarrow (4 \times 9) \rightarrow 36$

**Ans.84(B)**

K  $\xrightarrow{\text{(Opposite)}}$  P  
 I  $\xrightarrow{\text{(Opposite+1)}}$  S  
 J  $\xrightarrow{\text{(Opposite)}}$  Q

M  $\xrightarrow{\text{(Opposite)}}$  N

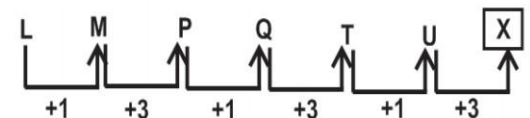
**Ans.85(D)**

**Ans.86(B)**

Cannot be determined  
 $13 \rightarrow (1 \times 3) \rightarrow (3)^3 \rightarrow 27 \rightarrow 2+7 \rightarrow 9$   
 $72 \rightarrow (7 \times 2) \rightarrow (14)^3 \rightarrow 2744 \rightarrow 2+7+4+4 \rightarrow 17$   
 $28 \rightarrow (2 \times 8) \rightarrow (16)^3 \rightarrow 4096 \rightarrow 4+0+9+6 \rightarrow 19$   
 $36 \rightarrow (3 \times 6) \rightarrow (18)^3 \rightarrow 5832 \rightarrow 5+8+3+2 \rightarrow 18$   
 $49 \rightarrow (4 \times 9) \rightarrow (36)^3 \rightarrow 117649 \rightarrow 1+1+7+6+4+9 \rightarrow 28$   
 $42 \rightarrow (4 \times 2) \rightarrow (8)^3 \rightarrow 512 \rightarrow 5+1+2 \rightarrow 8$

**Ans.87(C)**

**Ans.88(A)**

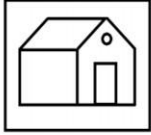


Ans.89(C)

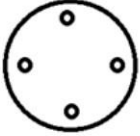


Ans.90(D) 5,6,2,3,4,1

Ans.91(C)



Ans.92(D)



Ans.93(A)

Ans.94(B)

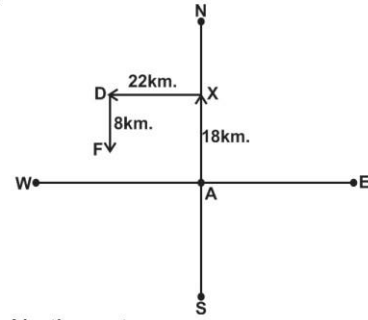
Ans.95(C)

Wednesday

Ans.96(B)

Ans.97(A)

Ans.(98-100)



Ans.98(D)

Ans.99(A)

Ans.100(A)

North-west  
South-east  
 $(FX)^2 = (8)^2 + (22)^2$   
 $= 64 + 484$   
 $(FX)^2 = 548$   
 $FX = 23 \text{ km. (approx..)}$

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