Railway Group D

Solution

RGD-87375869-E

General Science & General Awareness

Ans.1(A) The Khelo India Winter Games (KIWG) 2025 began on 30th January 2025 will feature 428 athletes from 19 competing teams.
The Games were inaugurated by Sports Minister Mansukh Mandaviya in Leh, Ladakh.
A traditional Ladakhi-style opening ceremony was planned to welcome 594 participants, including 428 athletes.
Nineteen teams, including states, Union Territories, and institutional outfits, are competing over five days in two events – ice hockey and ice skating – during the first part of KIWG 2025.
The second part, featuring snow games like skiing, will be hosted by Jammu and Kashmir from February 22 to 25.
This is the fifth edition of KIWG and the second time Ladakh is hosting the Winter Games.
Haryana sent the largest contingent (62 athletes), followed by Ladakh (52) and Maharashtra (48). Uttarakhand has the smallest team with only one athlete.

Ans.2(A)

Ans.3(A) Indian short film Anuja has been nominated for the 2025 Oscars in the Live Action Short category.
The film is directed by Adam J. Graves and Suchitra Mattai.
Anuja is backed by Guneet Monga, Priyanka Chopra, and Mindy Kaling.
The story revolves around two sisters facing a life-changing test of their bond.
Other nominees in the Live Action Short category include A Lien, The Last Ranger, I'm Not a Robot, and The Man Who Could Not Remain Silent.

Ans.4(C)

Ans.5(D)

Ans.6(A) Micheál Martin has been reappointed as Ireland's Taoiseach (Prime Minister) for the second time.
The reappointment took place on January 24, 2025.
Parliamentary protests caused a delay in the reappointment process.
The protests were related to disputes over extended speaking rights for independent lawmakers.
Micheál Martin's coalition with Fine Gael played a significant role in securing his second term.
He also received support from independent Members of Parliament (MPs).
This marks Micheál Martin's second term as Ireland's Prime Minister.

Ans.7(B)

Ans.8(D)

Ans.9(B) Jay Shah, ICC chairman, has been elected to the Marylebone Cricket Club's World Cricket Connects Advisory Board.
The announcement was made on January 24, 2025.
Jay Shah is one of the 13 founding members of the advisory board.
Other prominent founding members include Sourav Ganguly, Kumar Sangakkara, and Graeme Smith.
The advisory board focuses on discussing global cricket issues.
The second World Cricket Connects forum is scheduled to take place in June 2025.

Ans.10(C) Defence Minister Rajnath Singh inaugurated the Battlefield Surveillance System (SANJAY) on January 24, 2025.
SANJAY is an advanced system designed to enhance the Indian Army's reconnaissance capabilities.
The system integrates data from ground and aerial sensors.
It provides real-time surveillance and situational awareness for better decision-making.
SANJAY was developed in collaboration with Bharat Electronics.
The system will be deployed in phases and is expected to be fully operational by October 2025.

Ans.11(A)	**Ans.12(B)**	**Ans.13(B)**	**Ans.14(A)**
Ans.15(C)	**Ans.16(C)**	**Ans.17(D)**	**Ans.18(B)**
Ans.19(B)	**Ans.20(C)**	**Ans.21(B)**	**Ans.22(B)**
Ans.23(C)	**Ans.24(D)**	**Ans.25(C)**	**Ans.26(D)**
Ans.27(A)	**Ans.28(B)**	**Ans.29(B)**	**Ans.30(D)**
Ans.31(A)	**Ans.32(B)**		

Ans.33(D) Uttar Pradesh Foundation Day celebrations have taken place from January 24 to January 26, 2025, at Awadh Shilp Gram in Lucknow.
The UP Gaurav Samman has been conferred upon six distinguished individuals during the celebrations.
The grand event has been graced by Vice President Jagdeep Dhankhar, Governor Anandiben Patel, and Chief Minister Yogi Adityanath.
The theme for Uttar Pradesh Day 2025 has been "Development and Heritage: Uttar Pradesh on the Path to Progress."
Each UP Gaurav Samman recipient has received ₹11 lakh, a certificate of appreciation, and a shawl.
Awardees include Krishnakant Shukla (Varanasi), Himanshu Gupta (Vrindavan, Mathura), Manish Verma (Kanpur), Krishna Yadav (Bulandshahr), Colonel Subhash Deshwal (Bulandshahr), and Dr Jai Singh (Bahraich).

Ans.34(C)	**Ans.35(A)**	**Ans.36(D)**	**Ans.37(C)**
Ans.38(C)	**Ans.39(A)**	**Ans.40(C)**	**Ans.41(B)**
Ans.42(C)	**Ans.43(D)**	**Ans.44(A)**	**Ans.45(C)**

Mathematics

Ans.46(D) Upon finding the factors of 9009
9009 = 13×11×9×7
Hence
x – 1 = 13 that is x = 14
(x – 1)(x – 3)(x – 5)(x – 7) = (14 – 1) (14 – 3) (14 – 5) (14 – 7)
= (13)(11)(9)(7)
x = 14

Ans.47(B) Since the triangles are similar then the perimeter ratio would also be the side ratio hence 3 × 8 = 24 then 2 × 8 = 16

Ans.48(A) $= \left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\ldots\ldots\ldots\ldots\left(1-\frac{1}{30}\right)$
$= \frac{1}{2}\times\frac{2}{3}\times\frac{3}{4}.\ldots\ldots\ldots\ldots\ldots\frac{29}{30} = \frac{1}{30}$

Ans.49(B) Prime factorization of the numbers is
2100 = 2^2 × 3×5^2×7
4410 = 2×3^2×5×7^2
210 = 2×3×5×7
According to prime factorization, the HCF would be the prime factors that are common to all the

numbers and its power should be that of the smallest.
Hence HCF would be 210.

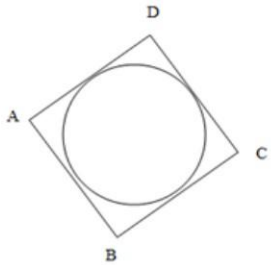
Ans.50(A) Arranging the data we can find that 81 occurs 4 times, 90 occurs 3 times, 18 two times and 68 once.
Mode refers to that observation which occurs the most, hence here 81 is the mode.

Ans.51(B) Area of the pavement = 2x (l + b + 2x), where x is the width of the pavement, l and b are the length and breadth of the park.
2×5(42 + 24 + 10) = 760

Ans.52(A) tan x + cot x = 2
This is possible when tan x = 1 and cot x = 1
Then tan^nx + cot^(n) x = $1^n + 1^n = 2$

Ans.53(A) $\sqrt{1332 + \sqrt{1332\sqrt{1332 + \cdots \infty}}} = x$
$\sqrt{1332 + x} = x$
$1332 + x = x^2$
$x^2 - x - 1332 = 0$
$x(x-37) + 36(x-37) = 0$
$x = -37, 37$
We can see that x = 37 can only satisfy the equation.

Ans.54(A)



If a quadrilateral circumscribes a circle then the sum of lengths of each pair of opposite sides are equal.
Hence AB + CD = BC + DA
6.5 + 9 = 7.5 + DA
DA = 8

Ans.55(C) Arranging in ascending order,
a – 4, a – 2, a + 3, a + 7, a + 10, a + 11
Now the number of readings is 6, it is even hence the median will be average 3rd and 4th reading
= (a + 3 + a + 7)/2
= a + 5

Ans.56(A) Mean = (42 + 40 + 53 + 49 + 55) ÷ 5 = 47.8

Ans.57(A) Average in English = (72 + 70 + 71 + 75 + 67)/5 = 71
Average in Hindi = (65 + 70 + 71 + 70 + 74)/5 = 70

Ans.58(C) Binod = 75 + 80 + 65 + 68 + 72 + 65 = 425
Bindu = 80 + 85 + 75 + 65 + 70 + 70 = 445
Baibhav = 82 + 88 + 70 + 69 + 71 + 71 = 451
Bimal = 78 + 87 + 65 + 70 + 75 + 70 = 445
Binu = 76 + 82 + 55 + 72 + 67 + 74 = 426
∵ Baibhav secured the highest total with 451 marks.

Ans.59(B) Total marks obtained by all the students in Science = 80 + 85 + 88 + 87 + 82 = 422
Average = 422 ÷ 5 = 84.4
Total marks obtained by all the students in History = 65 + 75 + 70 + 65 + 55 = 330
Average = 330 ÷ 5 = 66
Difference of average of science and history = 84.4 – 66 = 18.4

Ans.60(A) b = (2a+3)/(3a-2)
b = 5
5 = (2a+3)/(3a-2)
5(3a – 2) = 2a + 3
15a – 10 = 2a + 3
15a – 2a = 3 + 10
13a = 13
a = 1

Ans.61(B) a + 3b = 37…….(1)
a – 3b = 1 …….(2)
Solving both the equations we can get value of a= 19 and b=6,
2(19 + 6) = 2×25 = 50.

Ans.62(C) The diagonals in rectangles are not angle bisectors,
According to angle bisector theorem, Angle bisectors divide the opposite side in the ratio of the adjacent sides. Hence, if the diagonal DB which bisects the diagonal AC in the ratio 1:1, then the side AB : AC should also be in the ratio 1:1.
But both the sides in rectangle are not equal. Hence option C is not true and rest are true.

Ans.63(A) Let the ages of the children be x – 4.5, x, x + 4.5, x + 9
Now their sum must be equal to 49.
Hence 4x+ 9 = 49
x = 40/4 = 10.
Eldest child age = x + 9 = 10 + 9 = 19

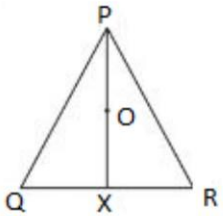
Ans.64(A) $\frac{x}{2a} = \frac{2b}{a+b}$
Then applying component and dividend
$\frac{x+2a}{x-2a} = \frac{3b+a}{b-a}$
Similarly
$\frac{x+2b}{x-2b} = \frac{3a+b}{a-b}$
$\frac{x+2a}{x-2a} + \frac{x+2b}{x-2b} = \frac{3b+a}{b-a} - \frac{3a+b}{b-a} = 2$

Ans.65(A) P/4 = (P×7×x)/100
x = 100/28
x = 34/7

Ans.66(B) 14 × 2 × P/100 + 11 × 2× (13200 – P)/100 = 3347.52
(28 – 22)P = 334752 – 290400
6P = 44352
P = 7392
So Amount invested in B = 13200 – 7392 = 5808

Ans.67(D) Total age of Husband + Wife Today
= 25 × 2 + 5 × 2 = 50 +10 =60
Total age of family = 21 × 3 = 63
Age of son at present = 63 – 60 = 3
After 5 year age of son = 5+ 3 = 8

Ans.68(A)



PQ = QR = RP
QR = 36/3 = 12 cm
XR = 12/ 2 = 6 cm
PX = √ (12)2 – (6)2
=√144 – 36 = √108 = 6√3
OP : OX = 2: 1
OP = 2 /3 × 6 √3 = 4 √3

Ans.69(C) 50 CP = 40SP

CP/SP = 4/5
CP < SP
% Profit = (5 – 4)/4 × 100 = 25 %

Ans.70(B) Unit place in 27 × 13 = 1
Unit place in 258 × 31 = 8
Unit place 27 × 13 – 258 × 31
= 11– 8 =3

General Intelligence and Reasoning

Ans.71(D) 172 + 4 ÷ 8 × 12 - 6 = ?
According to the question-
172 ÷ 4 × 8 - 12 + 6 = ?
= 43× 8 - 12 + 6
= 344-12+6
= 338

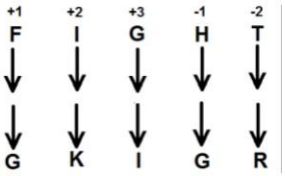
Ans.72(B) 8, 4, 2, 3, 5, 1, 10, 7, 9, 6

Ans.73(D) du

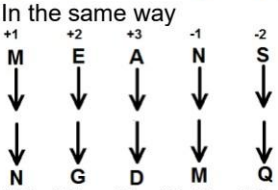
Ans.74(A) gm qt lr

Ans.75(A) gm

Ans.76(B)



In the same way



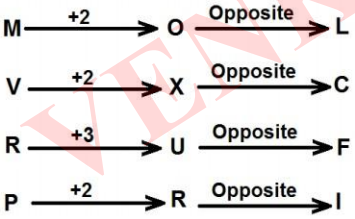
Ans.77(C) (16+12) = 28= (2×8)= 16
(38+22) = 60= (6×0)= 0
(42+8) = 50= (5×0)= 0

Ans.78(B) Vitamin- E

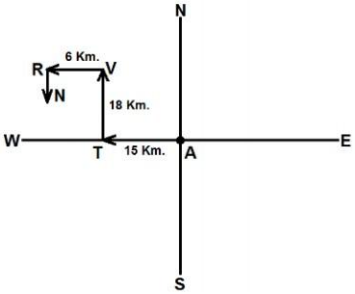
Ans.79(D) Except Peas, all are vegetables.

Ans.80(B) Except option (B), all are divisible by 3.

Ans.81(C)



Ans.(82-84)



Ans.82(A) North-west

Ans.83(C) $(RA)^2 = (21)^2 + (18)^2$
$= 441+324$
$(RA)^2 = 765$
RA= 28 km. (approx..)

Ans.84(D) Data inadequate

Ans.85(D)

Ans.86(A)

Ans.87(A)

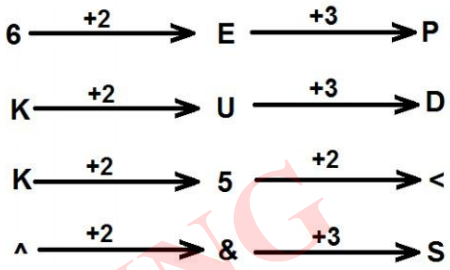
Ans.88(B)

Ans.89(B) I

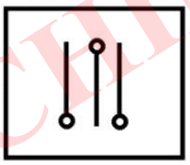
Ans.90(A) None

Ans.91(A) L6X

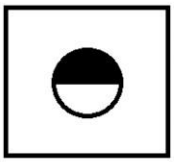
Ans.92(C)



Ans.93(B)



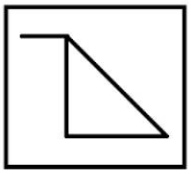
Ans.94(C)



Ans.95(A)

Ans.96(D)

Ans.97(C)



Ans.98(D)

Ans.99(A)

Ans.100(A)