RRB ALP CBT-I 2024 Official Paper (Held On: 27 Nov, 2024 Shift 1) (Previous Year Paper)

RRB Assistant Loco Pilot (ALP) • 2024 • 75 questions • 60 minutes • Answer key

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STAGE I (CBT I)

Q1. If 60% of a number is added to 120, then the result is the number itself. 60% of this number is _____.

(a) 200
(b) 320
(c) 180
(d) 300

Q2. If x : y = 8 : 3, then (x + y) : (x - y) = ?

(a) 5 : 11
(b) 11 : 5
(c) 2 : 5
(d) 5 : 2

Q3. Triangle ABC is similar to triangle DEF with BC : EF = 1 : 4. Find the area(Δ DEF) : area(ΔABC).

(a) 1 : 4
(b) 16 : 1
(c) 1 : 16
(d) 4 : 1

Q4. 48 men can do a work in 5 days while 40 women can do the same work in 9 days. In how many days can 4 men and 6 women together do the same work?

(a) 24 days
(b) 30 days
(c) 48 days
(d) 42 days

Q5. Which of the following statements about magnetic field is correct?

(a) Its direction at any point is measured by a magnetic compass.
(b) It is a scalar quantity.
(c) It is always in the form of straight lines.
(d) It only exists outside the magnet.

Q6. Which of the following physical quantities is equivalent to the total path length covered by a moving body?

(a) Displacement
(b) Distance
(c) Velocity
(d) Speed

Q7. A person saves 30% of his monthly income. If his monthly income increases by 20%, then he saves 20% more than the previous savings. The percentage increase in his expenditure is ___.

(a) 30%
(b) 16%
(c) 20%
(d) 25%

Q8. Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

24, 33, 44, 57, 72,?

(a) 89
(b) 94
(c) 100
(d) 96

Q9. Q starts from Point A and drives 14 km towards the South. He then takes a left turn, drives 10 km, turns left and drives 9 km. He then takes a left turn and drives 7 km. He takes a final right turn, drives 5 km and stops at Point B. Towards which direction should he drive to reach Point A again? (All turns are 90 degrees.)

(a) 3 km towards the South
(b) 3 km towards the East
(c) 3 km towards the North
(d) 3 km towards the West

Q10. RV11 is related to GK18 in a certain way. In the same way, DH29 is related to SW36. To which of the following options is PT22 related, following the same logic?

(a) EJ29
(b) FJ29
(c) FI29
(d) EI29

Q11. The LCM of two numbers is 84. If the numbers are in the ratio 2 : 3, then the sum of the numbers is:

(a) 25
(b) 40
(c) 70
(d) 60

Q12. The surface area of a sphere is 256 π m2. Find its diameter.

(a) 12m
(b) 8m
(c) 4m
(d) 16m

Q13. If each vowel in the word ROMANCE is changed to the nearest consonant succeeding it in the English alphabetical order and each consonant is changed to the nearest vowel succeeding it in English alphabetical order, then which of the following letters is repeated twice in the new group of letters thus formed?

(a) F
(b) O
(c) U
(d) P

Q14. If 'P' stands for '×', 'Q' stands for '÷ ', 'R' stands for '–' and 'S' stands for '+', what will come in place of the question mark '?' in the following equation?

(32 P 4) R (21 P 5) S (9 Q 3) P 6 = ?

(a) 33
(b) 41

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(c) 47
(d) 50

Q15. Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No bike is a car.

All cars are planes.

Conclusions

(I) No plane is a bike.

(II) All planes are cars.

(a) Only conclusion (II) follows
(b) Neither conclusion (I) nor (II) follows
(c) Only conclusion (I) follows
(d) Both conclusions (I) and (II) follow

Q16. Who among the following was appointed as the Brand Ambassador of the Ministry of Ports, Shipping and Waterways of the Government of India?

(a) P.R Sreejesh
(b) Sarabjot Singh
(c) Neeraj Chopra
(d) Manu Bhaker

Q17. Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some bulbs are sands.

All bulbs are candles.

Conclusion:

(I) Some candles are bulbs.

(II) No candle is a sand.

(a) Neither conclusion (I) nor (II) follows.
(b) Only conclusion (II) follows.
(c) Only conclusion (I) follows.
(d) Both conclusions (I) and (II) follow.

Q18. What recent decision did the Union Cabinet make regarding the Ayushman Bharat PM-JAY scheme on 11 September 2024?

(a) To extend benefits to all citizens aged 70 and above
(b) To increase the coverage amount for all citizens
(c) To discontinue the scheme
(d) To limit coverage to only low-income families

Q19. In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

Severe congestion is seen on the service road outside the apartment complex between 7.30 a.m. to 9 a.m. everyday due to many school buses from different schools picking up children from gate of the apartment complex. This is leading to a traffic jam, delaying many people travelling for work at this time.

Courses of Action:

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(I) No school buses should be permitted on the service road from 7.30 a.m. to 9 a.m.

(II) School buses should be permitted to enter the society gates.

(a) Only I follows
(b) Only II follows
(c) Both I and II follow
(d) Neither I nor II follows

Q20. If a man lifts 1 kg of load to the height of 2.5 m from the ground, then assuming acceleration due to gravity is 10 m/sec², magnitude of the work done by the man is _____.

(a) 0.25 joule
(b) 25 joules
(c) 2.5 joules
(d) 4 joules

Q21. The equivalent resistance of the series combination of R ohm and 5 ohm is 7 ohm. Here, R is _____.

(a) 5 ohm
(b) 1 ohm
(c) 7 ohm
(d) 2 ohm

Q22. Membrane bound organelles are NOT present in:

(a) Neither eukaryotic nor prokaryotic cells
(b) Only eukaryotic cells
(c) Both eukaryotic and prokaryotic cells
(d) Only prokaryotic cells

Q23. The value of (36)^(1/6) is:

(a) √36
(b) 1
(c) 2
(d) (6)^(1/3)

Q24. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 192 :: 34 : Y

(a) X = 45, Y = 136
(b) X = 48, Y = 128
(c) X = 52, Y = 102
(d) X = 59, Y = 117

Q25. Which of the following animals shows the power of regeneration?

(a) Earthworm
(b) Tick
(c) Planaria
(d) Leech

Q26. Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

(a) AK-VF
(b) XF-SC

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(c) SC-NX
(d) RB-MW

Q27. On which date did the Department of Posts launch the philately scholarship scheme in 2024?
(a) 15 August 2024
(b) 24 August 2024
(c) 5 September 2024
(d) 20 July 2024

Q28. Amita is 2 years elder than her friend Amrita. Amita's father is twice as old as Amita, and Amrita is twice as old as her sister. The ages of Amita's father and Amrita's sister differ by 43 years. The difference between the ages of Amita and Amrita is:
(a) 2
(b) 4
(c) 1
(d) 3

Q29. If the mean of a data is 65 and its mode is 23, then the median using empirical formula is:
(a) 53
(b) 51
(c) 52
(d) 54

Q30. The final match for Irani Trophy 2024-25, which was won by Mumbai, was conducted at _____.
(a) Patna
(b) Hyderabad
(c) Lucknow
(d) Ahmedabad

Q31. Which of the following receptors help in the detection of taste?
(a) Olfactory receptors
(b) Gustatory receptors
(c) Photoreceptors
(d) Phonoreceptors

Q32. Which of the following statements is/are correct?
Statements:
I) Gravitational force between two objects is independent of the distance of separation between two objects.
II) Gravitational force between two objects is inversely proportional to the square of the distance of separation between two objects.
III) Gravitational force between two objects is directly proportional to the product of their masses.
(a) Statements I and II
(b) Statements I, II and III
(c) Statements II and III
(d) Statements I and III

Q33. Which of the following options should come in place of the question mark ('?') in the given series based on the English alphabetical order?
FEB, KJG, POL, UTQ
(a) ZXS
(b) ZVU
(c) ZYV
(d) YZU

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Q34. Simplify (cos 45°)/(tan 30° + cot 60°) is equal to:

(a) √3/(√2(1 - √3))
(b) √3/√2
(c) √3/(√2(1 + √3))
(d) √3/2√2

Q35. Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) IG-EJ
(b) RP-NS
(c) OM-KP
(d) MK-IO

Q36. If each vowel in the word WEIGHT is changed to the letter immediately succeeding it in the English alphabetical order and each consonant is changed to the letter immediately preceding it in the English alphabetical order. Which of the following letters is repeated twice in the new group of letters thus formed?

(a) J
(b) F
(c) V
(d) G

Q37. Which two numbers should be interchanged to make the given equation correct?

63 - 45 + 14 + (81 ÷ 9) × 4 + 18 × 3 = 114

(Note: Interchange should be done of the entire number and not individual digits of a given number.)

(a) 4 and 3
(b) 14 and 18
(c) 45 and 81
(d) 63 and 81

Q38. There are two classrooms, A and B. If 7 students are shifted from A to B, then B will have twice the number of students as A. If 3 students are sent from B to A, then both the classrooms will have the same number of students. The positive difference between the number of students in the two classrooms is:

(a) 6
(b) 5
(c) 8
(d) 7

Q39. The Artisan Mahakumbh 2024, organised by the Government of India in Mumbai, was held to promote artisans under which of the following schemes?

(a) Pradhan Mantri Kaushal Vikas Yojana
(b) USTAAD (Upgrading the Skills and Training in Traditional Arts/Crafts for Development)
(c) Prime Minister's Employment Generation Programme
(d) Scheme of Fund for Regeneration of Traditional Industries (SFURTI)

Q40. Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 12 km/h and the speed of the other is 14 km/h. After how long will they be 4 km apart if they start driving at the same time?

(a) 1 hour 30 minutes
(b) 1 hour
(c) 2 hours 10 minutes
(d) 2 hours

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Q41. Which of the following options represents the product(s) of the reaction given below?

$MnO_2 + 4HCl \rightarrow$

(a) Only $MnCl_2$
(b) $MnCl_2$, Cl_2, and $2H_2O$
(c) Only H_2O
(d) Only Cl_2

Q42. Which of the following compounds is obtained when gypsum is heated at 373 K?

(a) CaO
(b) $CaSO_4 \cdot (1/2\ H_2O)$
(c) $CaSO_4 \cdot 2H_2O$
(d) $CaSO_4 \cdot 5H_2O$

Q43. In a certain code language, 'SKATE' is coded as '35186' and 'TAKER' is coded as '51623'. What is the code for 'R' in the given code language?

(a) 1
(b) 3
(c) 2
(d) 6

Q44. Which of the following molecules acts as an information source for making proteins?

(a) Deoxyribonucleic acid
(b) Carbohydrates
(c) Ribonucleic acid
(d) Phospholipids

Q45. A, B, C, D, E and F are sitting around a circular table facing the centre. F sits second to the right of C. D is an immediate neighbour of E and F. A sits second to the left of B. What is the position of E with respect to C?

(a) Immediate right
(b) Second to the right
(c) Third to the left
(d) Second to the left

Q46. What is required for the synthesis of thyroxin hormones?

(a) Nickel
(b) Bromine
(c) Iodine
(d) Chlorine

Q47. Which of the following is the molecular mass of HNO_3?

(a) 63 u
(b) 64 u
(c) 67 u
(d) 60u

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Q48. All 36 students in a class are standing in a row facing north. Preeti is 12^(th) from the right end while Alisha is 22nd from the left end. How many people stand between Preeti and Alisha?

(a) 3
(b) 1
(c) 5
(d) 2

Q49. If each consonant in the word PASTRY is changed to the letter immediately preceding it in the English alphabetical order and each vowel is changed to the letter immediately succeeding it in the English alphabetical order, then how many vowels are present in the new group of letters thus formed?

(a) Two
(b) One
(c) Three
(d) None

Q50. If the refractive index of air, water, and crown glass are n1,n2 and n3 respectively, then _____.

(a) n1 < n2 = n3
(b) n_(1)>n_(2)> n3
(c) n1 = n2 < n3
(d) n_(1)< n_(2)< n3

Q51. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

X : 66 :: 9 : Y

(a) X = 9, Y = 81
(b) X = 8, Y = 83
(c) X = 8, Y = 81
(d) X = 7, Y = 80

Q52. Which of the following is the highest award in the Rashtriya Vigyan Puraskar awards?

(a) Vigyan Vajra
(b) Vigyan Mahan
(c) Vigyan Shri
(d) Vigyan Ratna

Q53. A retailer would have made a profit of 18%.If he had sold an article at its marked price. If the marked price of the article is Rs. 826, then the cost price of the article is:

(a) 800
(b) 750
(c) 700
(d) 650

Q54. Simplify the following expression:

(4.32 × 4.32 - 2.64 × 2.64)/1.68

(a) 6.94
(b) 6.56
(c) 6.99
(d) 6.96

Q55. In a certain code language, ‘DOTH’ is coded as ‘3764’ and ‘HOLD’ is coded as ‘7943’. What is the code for ‘T’ in the given code language?

(a) 6
(b) 7
(c) 4

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(d) 3

Q56. Why do covalently bonded compounds have low boiling point?

(a) Have strong covalent bond within molecules but weak intermolecular force
(b) Have weak covalent bond within molecules but weak intermolecular force
(c) Have strong covalent bond within molecules and also strong intermolecular force
(d) Have strong intermolecular force within molecules but weak covalent bond

Q57. Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

BDF, IKM, PRT, WYA, ?

(a) CFI
(b) DGJ
(c) CEG
(d) DFH

Q58. Seven people, B, C, D, E, F, G and K are sitting in a straight line, facing north. Only five people sit between B and K. G sits to the immediate left of K. Only one person sits between G and E. D sits at some place to the left of F but at some place to the right of C.

Who sits third from the left end of the line?

(a) F
(b) C
(c) E
(d) D

Q59. The correct expression of 6.4646464646..... in the fractional form is:

(a) 646/99
(b) 640/99
(c) 6464/1000
(d) 640/100

Q60. In 2024, which country is cooperating with India to counter China's military assertiveness and has discussed technology transfer for UNICORN at the 2+2 ministerial dialogue?

(a) Japan
(b) France
(c) The United States of America
(d) Australia

Q61. Which of the following metals is more reactive towards dilute hydrochloric acid?

(a) Mg
(b) Al
(c) Zn
(d) Fe

Q62. Which of the following statements is INCORRECT?

(a) Compressed natural gas (CNG) is used as a fuel in vehicles these days.
(b) The oxygen supplied to hospitals in cylinders is not a compressed gas.
(c) The oxygen supplied to hospitals in cylinders is a compressed gas.
(d) In the gaseous state, the particles move about randomly at a high speed.

Q63. Which of the following singers was awarded the Padma Shri in 2024 for his significant contributions to Himachali folk and classical music?

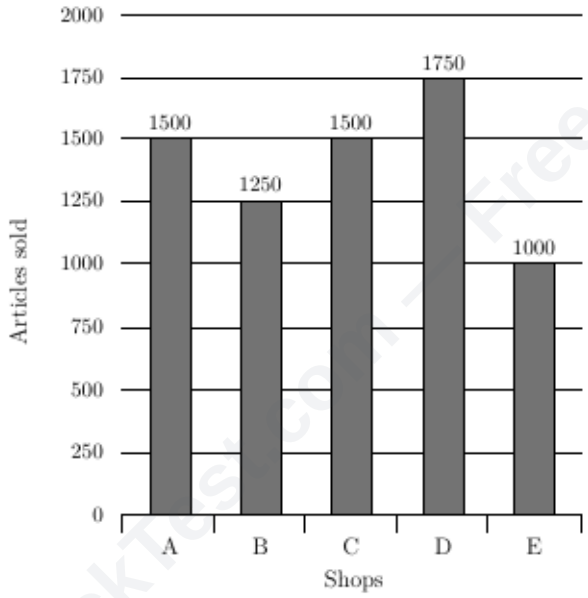
(a) Hansraj Raghuwanshi
(b) Som Datt Battu
(c) Kuldeep Sharma

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(d) Mohit Chauhan

Q64. Study the following graph and answer the given question.

The graph shows the number of articles sold in a week by different shops.



What percentage of articles did shop C sell more than shop B?

(a) 20%
(b) 50%
(c) 40%
(d) 30%

Q65. In a certain code language,

A + B means 'A is the mother of B',

A - B means 'A is the brother of B',

A × B means 'A is the wife of B',

A ÷ B means 'A is the father of B',

and A # B means 'A is the daughter of B'.

How is Q related to J if 'Q + R - P × S ÷ T - J + K'?

(a) Son's daughter
(b) Father's mother
(c) Mother's mother
(d) Daughter's son

Q66. Given that one cubic cm of marble weighs 25 gms, the weight of a cuboidal marble block 28 cm in width and 5 cm thick is 112 kg. The length of the block is:

(a) 26.5 cm
(b) 36 cm
(c) 32 cm
(d) 37.5 cm

Q67. A dishonest shopkeeper pretends to sell his goods at cost price. However, he uses a false weight on which 200 gm is written, but which actually weighs lesser. Using this false weight, the shopkeeper makes a gain of 25%. The actual measure of the weight used is:

(a) 150 gm
(b) 200 gm
(c) 160 gm
(d) 180gm

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Q68. Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

GB-HC-JL

PK-QL-SU

(a) NI-OJ-QR
(b) SN-TO-VW
(c) QL-RM-TV
(d) RM-SN-UV

Q69. Which Indian city recorded the highest PM2.5 level in 2023, making it the most polluted metropolitan area globally?

(a) Guwahati
(b) Greater Noida
(c) Mullanpur
(d) Begusarai

Q70. A sum of money lent on simple interest becomes 7/5 of itself in 4 years. Find the rate of interest per annum.

(a) 10%
(b) 12%
(c) 6%
(d) 15%

Q71. In 2023, India imported crude oil from which country, making payments in Indian Rupees (Rs.), as part of the Rupee-Dirham trade agreement?

(a) Russia
(b) UAE
(c) Qatar
(d) Oman

Q72. Which of the following is an example of heterogeneous solution?

(a) Lemonade
(b) Tincture of iodine
(c) Mixture of ethanol and water
(d) Mixture of oil and water

Q73. The distance between the centre of curvature and pole of a convex mirror of 1 m focal length is _____.

(a) 1.5m
(b) 1m
(c) 2m
(d) 0.5m

Q74. Which cell has changing shapes?

(a) Smooth muscle
(b) Nerve cell
(c) Amoeba
(d) Ovum

Q75. The median of the observations 20, 23, 25, 30, 20, 31, 32, 35, 20, 41, 42, 43, 20, 20 and 20 is:

(a) 26
(b) 25
(c) 28
(d) 23

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ANSWER KEY

1	a	2	a	3	a	4	a	5	a	6	a	7	a	8	a	9	a	10	a
11	a	12	a	13	a	14	a	15	a	16	a	17	a	18	a	19	a	20	a
21	a	22	a	23	a	24	a	25	a	26	a	27	a	28	a	29	a	30	a
31	a	32	a	33	a	34	a	35	a	36	a	37	a	38	a	39	a	40	a
41	a	42	a	43	a	44	a	45	a	46	a	47	a	48	a	49	a	50	a
51	a	52	a	53	a	54	a	55	a	56	a	57	a	58	a	59	a	60	a
61	a	62	a	63	a	64	a	65	a	66	a	67	a	68	a	69	a	70	a
71	a	72	a	73	a	74	a	75	a										

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