RRB ALP CBT-I 2024 Official Paper (Held On: 25 Nov, 2024 Shift 3) (Previous Year Paper)

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

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STAGE I (CBT I)

Q1. Which biotic component of an ecosystem is present in the greatest number?

(a) Primary Consumers
(b) Producers
(c) Secondary Consumers
(d) Tertiary Consumers

Q2. Given below is a cause followed by three effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause - City X has been lashed by lightning and heavy rains for the past two days. The Met Department has predicted more rain in the next 48 hours.

Effect I - The electricity board has decided to increase the tariff by 50 paise per unit in City X.

Effect II - Water-logging is being reported from many areas of City X.

Effect III - Several trees reportedly fell last night on MG Road injuring at least 12 people.

(a) Both I and II are possible effects.
(b) Only II is a possible effect.
(c) Both II and III are possible effects.
(d) Only I is a possible effect.

Q3. The phenomenon involved in the image formation by mirrors is _____.

(a) diffraction
(b) refraction
(c) reflection
(d) interference

Q4. If three numbers are in the ratio 5 : 6 : 8 and their sum is 3800, then the greatest number will be:

(a) 1200
(b) 2000
(c) 1000
(d) 1600

Q5. A, B, C, D, E and F are sitting around a circular table facing the centre. Only two people sit between F and C. D sits to an immediate right of F. A is an immediate neighbour of B and C. What is the position of E with respect to B?

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

Q6. Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

13, 24, 46, 79, 123,?

(a) 176
(b) 172
(c) 178
(d) 174

Q7. A man invested 1/3 of his income at 7% simple interest, 1/4 of his income at 8% simple interest, and the remainder of his income at 10% simple interest. If the total interest at the end of one year was Rs. 561, what was his initial income?

(a) Rs. 4,500
(b) Rs. 6,600
(c) Rs. 7,500
(d) Rs. 3,000

Q8. In a certain code language, 'ALSO' is coded as '8693' and 'SALE' is coded as '2836'. What is the code for 'E' in the given code language?

(a) 9
(b) 3
(c) 2
(d) 8

Q9. Express the expression below as a perfect square:

$a^2 + 9b^2 + c^2 - 6ab + 6bc - 2ac$

(a) $(a - 3b - 2c)^2$
(b) $(a + 3b + c)^2$
(c) $(a - 3b - c)^2$
(d) $(a - 3b + c)^2$

Q10. The sum of the ages of 5 children born at intervals of 2 years each is 40 years. What is the age of the eldest child?

(a) 10 years
(b) 14 years
(c) 16 years
(d) 12 years

Q11. Two successive discounts of 30% and 35% on a deal are equivalent to a single discount of:

(a) 60%
(b) 65%
(c) 54.5%
(d) 55.5%

Q12. Harmful metabolic wastes from our body are removed by the biological process called:

(a) defecation
(b) transportation
(c) secretion
(d) excretion

Q13. The Jivitputrika festival, which was in the news for an incident in September 2024, is primarily celebrated in which of the following states?

(a) West Bengal
(b) Odisha
(c) Bihar
(d) Gujarat

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Q14. Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ZTQ, XRO, VPM, TNK, ?

(a) RKL
(b) RML
(c) RLI
(d) SMK

Q15. Aruna borrowed a sum of Rs. 9,000 from Jayshree at 10% per annum on compound interest, compounded annually. Find the total amount paid by Aruna after 2 years to clear all the dues.

(a) Rs. 10,098
(b) Rs. 10,890
(c) Rs. 10,980
(d) Rs. 10,089

Q16. 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 : 529 :: 21 : Y

(a) X = 14, Y = 529
(b) X = 12, Y = 729
(c) X = 11, Y = 625
(d) X = 18, Y = 676

Q17. There is a 10 m tall tower between two parallel roads. The angles of depression of the roads from the top of the tower are 30° and 45° respectively. Approximately, how far are the roads from each other?

(a) 30.82 m
(b) 27.32 m
(c) 29.56 m
(d) 26.44 m

Q18. The total count of prime numbers less than 50 is:

(a) 17
(b) 15
(c) 14
(d) 13

Q19. Town A lies to the north of Town B. Town C lies to the south of Town A. Town D lies to the northeast of Town C. Town E lies to the south of Town D. Town B lies to the northwest of Town E. Town B lies to the south of Town C. What is the position of Town E with respect to Town C?

(a) Northwest
(b) Northeast
(c) Southwest
(d) Southeast

Q20. Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CGM, EIO, GKQ, IMS, ?

(a) KOX
(b) KNY
(c) KOV
(d) KOU

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Q21. The kinetic energy of a body of mass 2 kg, which is moving with the constant velocity 5 m/sec, is _____.

(a) 100 joules
(b) 25 joules
(c) 10 joules
(d) 50 joules

Q22. Every trait in an organism is influenced by which of the following?

(a) Only maternal DNA
(b) By both maternal and paternal DNA equally
(c) More by paternal DNA than maternal DNA
(d) Only paternal DNA

Q23. Who among the following is India's youngest Olympic medallist as of August 2024?

(a) Manu Bhaker
(b) Lakshya Sen
(c) Aman Sherawat
(d) Neeraj Chopra

Q24. When an object is kept in front of a concave mirror of focal length 10 cm, a real image is formed at a distance of 20 cm in front of the mirror. Here, the object distance is _____.

(a) -5 cm
(b) -20 cm
(c) -10 cm
(d) -30 cm

Q25. The salaries of P and Q together amount to Rs. 2,000. P spends 95% of his salary and Q spends 85% of his salary. If now their savings are the same, then P's salary is:

(a) Rs. 1,500
(b) Rs. 500
(c) Rs. 1,250
(d) Rs. 750

Q26. Arpita buys 9 oranges and 8 bananas for Rs. 276. When the cost of an orange is decreased by 10% and that of a banana remains the same, then the cost of 5 oranges and 10 bananas is Rs. 210. What is the original cost of 3 oranges and 4 bananas?

(a) Rs. 108
(b) Rs. 120
(c) Rs. 116
(d) Rs. 123

Q27. Justice M Fathima Beevi was the first female Judge appointed to the Supreme Court of India in 1989. She passed away at the age of 96 on:

(a) 22 November 2023
(b) 23 November 2023
(c) 26 November 2023
(d) 25 November 2023

Q28. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster 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) VRU
(b) PKO
(c) FAE
(d) MHL

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Q29. Sameer has a solid metal ball having a diameter of 6 cm. He melts it and uses the material for making a solid cylinder. If the diameter of the base of the cylinder is same as that of the ball, what would the height of the cylinder be?

(a) 4.5 cm
(b) 4 cm
(c) 6 cm
(d) 8 cm

Q30. Select the correct statement.

(a) Pollination is visit of insects to the flower.
(b) Pollination is the growth of pollen tube in ovule.
(c) Pollination is germination of pollen grains.
(d) Pollination is transfer of pollen grains from stamen to stigma.

Q31. Which of the following is the symbol of the unit of atomic mass?

(a) u
(b) mg
(c) g
(d) ml

Q32. The first _____ transport aircraft was formally inducted into the Indian Air Force in 2023.

(a) C-225 MW
(b) C-275 MW
(c) C-295 MW
(d) C-250 MW

Q33. Which of the following is an example of emulsion?

(a) Foam
(b) Face Cream
(c) Sponge
(d) Rubber

Q34. Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

PK-RM-TU

HC-JE-LM

(a) MH-OJ-PR
(b) MH-OJ-QR
(c) MG-OJ-QR
(d) MH-OJ-QS

Q35. A car travels 80 km at the speed of 20 km/h and the next 30 km at the speed of 30 km/h. What is its average speed?

(a) 30 km/h
(b) 20 km/h
(c) 40 km/h
(d) 22 km/h

Q36. Seven people, B, C, D, E, F, G, and K, are sitting in a straight line, facing north. No one sits to the right of G. Only three people sit between G and E. Only two people sit between E and F. C sits third to the left of D. K sits to the immediate right of D.

How many people sit between B and F?

(a) Three
(b) One
(c) Two
(d) Four

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Q37. What is the function of xylem?

(a) Conduction of food
(b) Conduction of protein
(c) Conduction of water and minerals
(d) Conduction of lipid

Q38. Carbon, in all its allotropic forms, burns in oxygen to give _____.

(a) carbon monoxide
(b) carbon dioxide
(c) carbonic acid
(d) methane

Q39. If each vowel in the word TEACHING is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter following it in the English alphabetical order and then arrange the letters in alphabetical order, then which of the following letters will be fourth from the right in the group of letters thus formed?

(a) J
(b) I
(c) F
(d) H

Q40. In a closed circuit, if 100 coulomb charges flow for a duration of 50 sec, then the current drawn in the circuit is _____.

(a) 5 A
(b) 0.2 A
(c) 0.5 A
(d) 2 A

Q41. JGLI is related to NKPM in a certain way based on the English alphabetical order. In the same way, OLQN is related to SPUR. To which of the following options is LINK related, following the same logic?

(a) PMRO
(b) PMOR
(c) MPRO
(d) MPOR

Q42. 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 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 : 243 :: 17 : Y

(a) X = 31, Y = 169
(b) X = 27, Y = 156
(c) X = 25, Y = 171
(d) X = 34, Y = 148

Q43. The Federation of International Hockey (FIH) Men's World Cup 2023 was conducted in _____.

(a) Amaravati, Andhra Pradesh
(b) Kochi, Kerala
(c) Rourkela, Odisha
(d) Patna, Bihar

Q44. If ‘P’ stands for ‘×’, ‘Q’ stands for ‘÷’, ‘R’ stands for ‘−’ and ‘S’ stands for ‘+’, what will come in place of question mark ‘?’ in the following equation?

15P6R11P4S38R41S2P5=?

(a) 61

(b) 41
(c) 49
(d) 53

Q45. Which cell has changing shapes?
(a) Smooth Muscle
(b) Ovum
(c) Amoeba
(d) Nerve cell

Q46. 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) PV-XR
(b) DJ-LF
(c) CH-MR
(d) GM-OI

Q47. Who among the following has received the Vigyan Ratna Award in Rashtriya Vigyan Puraskar 2024?
(a) Prof. Umesh Varshney
(b) Dr. Avesh Kumar Tyagi
(c) Dr. Anandharamakrishnan C
(d) Prof. Govindarajan Padmanabhan

Q48. A shopkeeper, on selling a pan for Rs. 10, loses 1/11 of what it cost him. The cost price of a pan is:
(a) 10
(b) 11
(c) 9
(d) 12

Q49. What is/are the product(s) of the reaction between an acid and a base?
(a) Both Salt And Hydrogen Gas
(b) Only water
(c) Only salt
(d) Both salt and water

Q50. The length, the breadth and the height of a closed cuboidal box are 2.5 m, 2 m and 90 cm, respectively. What would be the cost of a canvas needed to cover this box completely, if the cost of the canvas is Rs. 70 per m^2?
(a) 1507
(b) 1267
(c) 1448
(d) 1348

Q51. According to the latest NSSO consumer expenditure survey conducted in 2024, what is the reported poverty rate in India?
(a) 10%-15%
(b) Below 5%
(c) Below 10%
(d) Above 15%

Q52. In a quadrilateral PQRS, if the sum of measures of angles angle Q and angle S is 150° while the measures of angles angle P and angle R are in ratio 4 : 3, then the measure of angle R will be
(a) 120
(b) 90
(c) 210

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(d) 150

Q53. The average monthly salary of a person for the months of January, February, March and April is Rs. 8,000 and that for the months of February, March, April and May is Rs. 8,500. If his salary for the month of May is Rs. 6,500, find his salary for the month of January.

(a) 4500
(b) 5000
(c) 2500
(d) 3000

Q54. Which legendary musician, known for his work in films like 'Amar Akbar Anthony' and 'Bobby', was awarded the Padma Bhushan on Republic Day 2024?

(a) Pyarelal Sharma
(b) Laxmikant Shantaram Kudalkar
(c) RD Burman
(d) Ilaiyaraaja

Q55. In a certain code language, ‘towards the end’ is coded as ‘mb rh gp’ and ‘end it here’ is coded as ‘hk mb bl’. What is the code for ‘end’ in the given code language?

(a) gp
(b) hk
(c) mb
(d) bl

Q56. Which two numbers should be interchanged to make the given equation correct?

56 + 18 - 11 × 3 + 4 × (66 ÷ 2) + 22 = 151

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

(a) 3 and 2
(b) 11 and 22
(c) 18 and 11
(d) 56 and 66

Q57. Study the given table and answer the question that follows.

The table depicts the number of tickets sold on Friday and Saturday by cash and online mode for a cricket match.

Days	Number of tickets sold (cash)	Number of tickets sold (online)
Friday	725	525
Saturday	1000	3000

How many tickets were sold in total on Friday by cash and online together?

(a) 1150
(b) 1250
(c) 1350
(d) 1050

Q58. How many water molecules are required to react with three molecules of the iron atom to form Fe3O4?

(a) 4
(b) 3
(c) 1
(d) 2

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Q59. Which of the following examples shows that particles of matter have enough space between them?

(a) Boiling of water
(b) Potassium permanganate got evenly distributed in water
(c) Breaking of iron nail
(d) Lighting incense stick

Q60. The HCF of 450, 1500, and 1650 is:

(a) 50
(b) 200
(c) 100
(d) 150

Q61. In the word DYNAMIC, each letter of the word is changed to the letter immediately succeeding it in the English alphabetical order and then the new group of letters thus formed is rearranged according to the English alphabetical order. Which letter is first to the right in the new rearranged group of letters?

(a) E
(b) D
(c) B
(d) Z

Q62. The average of the first five multiples of 3 is:

(a) 9
(b) 3
(c) 12
(d) 15

Q63. Evaluate the given expression.

12+18/3

(a) 22
(b) 12
(c) 18
(d) 10

Q64. A train travelling at a speed of 72 km/h crosses a pole in 24 sec. What is the length of the train?

(a) 300m
(b) 125m
(c) 150m
(d) 480m

Q65. In the address regarding the Union Budget 2024, the Finance Minister highlighted key areas of focus for the upcoming year.

Which of the following sectors was emphasised?

(a) Infrastructure, Technology, Tourism and Environment
(b) Education, Sports, Culture and Entertainment
(c) Agriculture, Defense, Space and Healthcare
(d) Employment, Skilling, MSMEs and the Middle Class

Q66. Which of the following statements is correct?

(a) The weight of a given object is 6 times higher on the moon as compared to its weight on the earth.
(b) The weight of a given object is the same when we measure it on the earth or moon.
(c) The weight of a given object is 6 times higher on the earth as compared to its weight on the moon.
(d) The weight of a given object is 2 times higher on the earth as compared to its weight on the moon.

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Q67. Seven boxes A, B, C, D, E, F and G are kept one over the other but not necessarily in the same order. A is kept second from the bottom. Only three boxes are kept between E and G. G is not kept at the top-most position. F is kept immediately above C. C is kept immediately above E. B is not kept fourth from the top.

How many boxes are kept between C and A?

(a) 1
(b) 2
(c) 4
(d) 3

Q68. Large number of impurities present in ore, such as sand, soil, etc., is called

(a) Gangue
(b) Wrought
(c) Spongy
(d) Hardness of ore

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

(a) Greater Noida
(b) Guwahati
(c) New Delhi
(d) Begusarai

Q70. 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"

A # B means "A is the daughter of B"

How is P related to K if "Q - S + P - T # R ÷ K"?

(a) Brother
(b) Sister
(c) Father
(d) Mother

Q71. What determines the pattern of the magnetic field generated by a current through a conductor?

(a) Material of the conductor
(b) Direction of the current
(c) Shape of the conductor
(d) Colour of the conductor

Q72. According to the second law of motion, the rate of change of momentum is proportional to _____.

(a) force
(b) displacement
(c) inertia
(d) energy

Q73. 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:

All doors are gates.

No door is a lock.

Conclusion:

(I) Some locks are gates.

(II) No lock is a door.

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

Q74. If each of the letters in the word CONAGE is arranged in the English alphabetical order, then how many letters are there in the English alphabetical series between the letter which is fourth from the left and the one which is fourth from the right in the new letter-cluster thus formed?

(a) Two
(b) Five
(c) Four
(d) One

Q75. 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 microphones are speakers.

No speaker is a piano.

Conclusions:

(I) No microphone is a piano.

(II) Some speakers are microphones.

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

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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