Railway NTPC Pre

Read the following instructions carefully before you begin to attempt the questions.

INSTRUCTIONS TO CANDIDATE

(1)   This booklet contains **100 Questions.**

  CBT I (Mathematics, Mental Ability, General Science & General Awareness)   (100 Questions)

(2)   All the questions are compulsory and carry equal marks.

(3)   Before you start to attempt the questions, you must explore this booklet and ensure that it contains all the pages and find that no page is missing or replaced. If you find any flaw in this booklet, you must get it replaced immediately.

(4)   **Each question carries negative marking also as 1/3 mark will be deducted for each wrong answer.**

(5)   Answer must be shown by completely blackening the corresponding circles on the Answer-Sheet against the relevant question number by **Black/Blue ball pen** only.

(6)   Failure to comply with any of the above Instructions will make a candidate liable to such action/penalty as may be deemed fit.

(7)   Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.

(8)   Mobile phones and wireless communication device are completely banned in the examination halls/rooms. Candidates are advised not to keep mobile phones/any other wireless communication devices with them even switching it off, in their own interest. Failing to comply with this provision will be considered as using unfair means in the examination and action will be taken against them including cancellation of their candidature.

(9)   No rough work is to be done on the Answer-Sheet.

(10) No candidate can leave the examination hall before completion of the exam.

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NAME OF CANDIDATE:..........................................
DATE :........................ CENTRE CODE :.................
ROLL No ......................................................
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Maximum Marks	:	100
Total Questions	:	100
Time Allowed	:	90 Min.

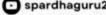**DO NOT OEPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO**

QYZ-9II024507-E

CBT I (Mathematics, Mental Ability, General Science & General Awareness)

Direction 1 and 2: Seven boys A, B, C, D, E, F and G are standing in a line. G is between A and E. F and A have one boy between them. E and C have two boys between them. D is to the immediate right of E. C and B have three boys between them.

1. C is standing between?
   (A) A and F
   (B) D and G
   (C) A and D
   (D) F and G

2. Who is second from left?
   (A) C
   (B) G
   (C) E
   (D) A

3. Ten Degree Channel is between _____.
   (A) Dover and Calais
   (B) Alaska and Russia
   (C) Little Andaman and Car Nicobar
   (D) North Korea and South Korea

Direction 4 to 6: Select the related word/letter/number from the given alternatives.

4. Pineapple : Fruit : : Radish : ?
   (A) Root
   (B) Fruit
   (C) Stem
   (D) Bray

5. NUMBER : UNBMRE : : SPORTS : ?
   (A) PSORST
   (B) PRSOST
   (C) PSROST
   (D) PSORST

6. 6 : 222 : 7 : ?
   (A) 350
   (B) 343
   (C) 336
   (D) 210

7. A temperature difference of 25°C is equivalent to a temperature difference of _____.
   (A) 25° F
   (B) 45° F
   (C) 67° F
   (D) 77°F

8. The ratio of the ages of a father to that of his son is 5 : 2. If the product of their ages in years is 1000, then find the father's age after 10 years?
   (A) 50 years
   (B) 60 years
   (C) 80 years
   (D) 100 years

9. A shopkeeper marks his goods 20% above his cost price and gives 15% discount on the marked price. What is his gain percentage?
   (A) 5%
   (B) 4%
   (C) 2%
   (D) 1%

10. The value of Planck's constant is _____.
    (A) 6.62×10^{-34} J
    (B) 6.62×10^{-34} Js
    (C) 6.62×10^{-34} erg.s
    (D) None of these

11. Yen is the currency of _____.
    (A) China
    (B) Taiwan
    (C) North Korea
    (D) Japan

12. In a certain code language, 'GENERAL' is written as 'IEPETAN'. What is the code for 'REVOLTS' in that code language?

    (A) TEXONTU
    (B) NEXTOTV
    (C) TEXNOTU
    (D) TEXNTOU

13. In which championship did Bala Devi score her 50th international goal, making her the first Indian woman to achieve this milestone?
    (A) AFC Women's Cup
    (B) SAFF Women's Championship
    (C) FIFA Women's World Cup
    (D) U-20 Women's Championship

14. What is the Highest Common Factor of 1365, 1560 and 1755?
    (A) 195
    (B) 65
    (C) 13
    (D) 39

15. Cooking will be taken longest time _____.
    (A) at the sea level
    (B) at Shimla
    (C) at Mount Everest
    (D) None of these

16. Which one is the largest fraction among $\frac{3}{4}, \frac{7}{8}$ and $\frac{5}{6}$?
    (A) $\frac{3}{4}$
    (B) $\frac{7}{8}$
    (C) $\frac{5}{6}$
    (D) All are equal

17. Optical fibre works on the principle of _____.
    (A) Total internal reflection
    (B) Refraction
    (C) Scattering
    (D) Interference

18. In a certain code language, 'REST' is written as '5631', 'POT' is written as '582', 'DOOR' is written as '4883' and 'CREED' is written as '97374'. What is the code for 'R' in that code language?
    (A) 8
    (B) 3
    (C) 9
    (D) 7

19. Six persons P, Q, R, S, T and V are sitting in a circle facing one another front to front. P is sitting in front of Q. Q is sitting to the right of T and left of R. P is to the left of U and right of S. Who is sitting opposite to S?
    (A) U
    (B) T
    (C) R
    (D) P

20. When iron is rusted, it is _____.
    (A) oxidized
    (B) reduced
    (C) evaporated
    (D) decomposed

21. What is the value of $\sqrt{19 + 8\sqrt{3}}$?
    (A) $4 + \sqrt{3}$
    (B) $4 - \sqrt{3}$
    (C) $8 + \sqrt{3}$
    (D) $8 - \sqrt{3}$

22. The resistance of an ideal voltmeter is _____.
    (A) Zero
    (B) Very low
    (C) Very high
    (D) Infinite

23. A sum at simple interest of $13\frac{1}{2}$% per annum amounts to ₹ 3080 in 4 year. What is the sum?
(A) ₹ 2000 (B) ₹ 1850
(C) ₹ 1680 (D) ₹ 1550

24. In which type of coal percentage of carbon is the highest?
(A) Peat (B) Lignite
(C) Bituminous (D) Anthracite

25. If income of Varun is 25% more than that of Akash, then income of Akash is how much percent less than that of Varun?
(A) 18% (B) 24%
(C) 20% (D) 21%

26. Tsunamis are originated due to _____.
(A) Sea waves (B) Earthquake
(C) Hurricane (D) Rotation of the earth

Directions 27 to 29: A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

27. B, C, E, H, L, ?, ?
(A) X, Y (B) M, N
(C) Q, W (D) O, P

28. 97, 86, 99, 88, 101, ?, ?
(A) 88, 99 (B) 90, 103
(C) 121, 108 (D) 114, 103

29. ACE, HJL, OQS, ?
(A) TVX (B) TUV
(C) VXZ (D) UWY

30. Odissi is folk dance of which state?
(A) Odisha (B) Nagaland
(C) Goa (D) Assam

31. Recently, in which city did Prime Minister Narendra Modi reached to attend the 16th BRICS Summit?
(A) Kazan (B) Moscow
(C) St. Petersburg (D) Hermitage

32. S is shorter than K but taller than R. M is the tallest. A is a shorter than K but taller than S. If they stand in the order of increasing heights, who will be the second?
(A) A (B) S
(C) R (D) K

33. If $2\cos\theta - \sin\theta = \frac{1}{\sqrt{2}}$ ($0° \leq \theta < 90°$), then what is the value of $2\sin\theta + \cos\theta$?
(A) $\frac{1}{\sqrt{2}}$ (B) $\sqrt{2}$
(C) $\frac{3}{\sqrt{2}}$ (D) $\frac{1}{\sqrt{3}}$

34. Two circles intersect each other at A and B, P is a point on produced BA. PT and PQ are tangents to circles, then what is the relation of PT and PQ is?

(A) PT = 2PQ (B) PT < PQ
(C) PT > PQ (D) PT = PQ

35. Brihadeshwara Temple is _____ temple.
(A) Lord Shiva (B) Lord Ganesha
(C) Lord Krishana (D) Lord Vishnu

Direction 36 to 38: Following questions are based on five three-digit numbers given below.

528, 739, 846, 492 and 375

36. If positions of the first and the third digits of each number are interchanged, then which of the following will be the middle digit of the third highest number?
(A) 2 (B) 3
(C) 4 (D) 7

37. Which of the following represents the sum of the first two digits of the highest number?
(A) 7 (B) 10
(C) 12 (D) 13

38. If the position of the first and the second digits of each number are interchanged, which of the following will be third digit of the second lowest number?
(A) 8 (B) 9
(C) 6 (D) 2

Direction 39 to 41: Select the odd word/letter from given alternatives.

39. (A) Major (B) Colonel
(C) Brigadier (D) Admiral

40. (A) RNMP (B) JFEH
(C) RPOQ (D) HDCF

41. (A) DGJM (B) CFIL
(C) BEHK (D) BHKN

42. Which of the following compounds transforms baking soda into baking powder?
(A) $KHCO_3$ (B) $NaHCO_3$
(C) $KHC_4H_4O_6$ (D) KCl

43. What is the value of
$$\frac{(0.137+0.098)^2 + (0.137-0.098)^2}{0.137\times0.137+0.098\times0.098}?$$
(A) 2.0 (B) 0.2
(C) 0.235 (D) 0.039

Direction 44 and 45: Read the following information carefully and answer the questions given below.

'P + Q' means that 'P is the son of Q'
'P – Q' means that 'P is the wife of Q'
'P × Q' means that 'P is the brother of Q'
'P ÷ Q' means that 'P is the mother of Q'

44. What does 'X + Y + Z' means?
(A) Z is the father of Y (B) Y is the son of Z
(C) Z is the uncle of Y (D) Z is the brother of X

45. If C – A + B is given, which statement is true?
(A) C is the father of B
(B) C is the mother of B
(C) A is the mother of B
(D) C is daughter in law of B

46. A, Q, Y and Z are different persons. Z is the father of Q. A is the daughter of Y. Y is the son of Z. If P is the son of Y and B is the brother of P, then which of the following statement is correct?
(A) B and Y are brothers
(B) A is the sister of B
(C) Z is the uncle of B
(D) Q and Y are brothers

47. What is the value of $1^2 + 2^2 + 3^2 + ... + 10^2$?
(A) 375
(B) 360
(C) 275
(D) 385

48. Which of the following shows electrical conduction?
(A) Diamond
(B) Sodium
(C) Graphite
(D) Potassium

49. How much will a sum of ₹ 7250 amount to in a span of 2 years at 6% per annum under compound interest (rounded off to the nearest integer)?
(A) ₹ 8176
(B) ₹ 8146
(C) ₹ 8216
(D) ₹ 8170

50. If $(r\cos\theta – \sqrt3)^2 + (r\sin\theta – 1)^2 = 0$, then what is the value of $\dfrac{r\tan\theta + \sec\theta}{r\sec\theta + \tan\theta}$?
(A) $\dfrac{4}{5}$
(B) $\dfrac{3}{5}$
(C) $\dfrac{\sqrt3}{4}$
(D) $\dfrac{\sqrt5}{4}$

51. In a certain code language 'IPL' is written as '81256144'. What is the code for 'BUT' in that code language?
(A) 4441400
(B) 4444100
(C) 4100444
(D) 4144400

52. A group of men decided to do work in 10 days, but five of them became absent. If the rest of the group did the work in 12 days, what is the original number of men's?
(A) 32
(B) 40
(C) 30
(D) 48

53. A man can row a boat at a speed of 10 km/hr upstream and 16 km/hr downstream. What is the speed of the man rowing the boat in still water?
(A) 10 km/hr
(B) 12 km/hr
(C) 13 km/hr
(D) 14 km/hr

54. Poona pact was signed between _____.
(A) Gandhiji and Lord Irwin
(B) Gandhiji and Jinnah
(C) Gandhiji and S.C. Bose
(D) Gandhiji and Ambedkar

55. Length of the side of an equilateral triangle is $4\sqrt3$ cm. What is the height (in cm) of triangle?
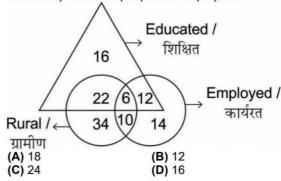(A) 6
(B) 3
(C) 8
(D) 4

56. Who played an important role in signing of Gandhi Irwin Pact?
(A) Motilal Nehru
(B) Madan Mohan Malviya
(C) Tej Bahadur Sapru
(D) Chintamani

57. Iodine deficiency in diet causes _____.
(A) Beri-Beri
(B) Rickets
(C) Night-blindness
(D) Goitre

58. A dealer sold a radio at a loss of 2.5%. Had he sold it for ₹ 100 more, he would have gained 7.5%. For what value should he sell it in order to gain $12\frac{1}{2}\%$?
(A) ₹ 1200
(B) ₹ 1250
(C) ₹ 1000
(D) ₹ 1125

59. Which is the correct combination of mathematical signs to replace '*' sign and to balance the given equation.
24 * 34 * 2 * 5 * 12
(A) + ÷ × =
(B) = ÷ + –
(C) = ÷ – +
(D) + ÷ = ×

60. A started a business with ₹ 450 and was joined afterwards by B with ₹ 300. After how many months did B join if the profits at the end of the year were divided in the ratio 2 : 1?
(A) 4
(B) 5
(C) 3
(D) 9

61. Khalsa was founded by _____.
(A) Guru Gobind Singh
(B) Guru Ramdas
(C) Guru Nanak
(D) Guru Arjan Dev

62. Who has won the noble piece prize 2019?
(A) Abiy Ahmed Ali
(B) Lemma Megersa
(C) Nadia Murad
(D) Denis Mukwege

63. The average of 50 numbers is 38. If two numbers namely 45 and 55 are discarded the average of the remaining numbers is _____.
(A) 35
(B) 32.5
(C) 37.5
(D) 36

64. How many educated people are employed?

(A) 18
(B) 12
(C) 24
(D) 16

65. If the annual increase in the population of a town is 4% and the present number of people is 15625, what will the population be in 3 years?
(A) 17500
(B) 17576
(C) 18500
(D) 18950

66. Which of the following place has never got the vertical rays of the sun?
(A) Srinagar (B) Mumbai
(C) Chennai (D) Shimla

67. What is the Least Common Multiple of $\frac{2}{3}, \frac{3}{5}, \frac{4}{7}$ and $\frac{9}{13}$?
(A) 36 (B) $\frac{1}{36}$
(C) $\frac{1}{1365}$ (D) $\frac{12}{455}$

68. Which of the following non-member of Parliament has the right to address it?
(A) Attorney General of India
(B) Solicitor General of India
(C) Chief Justice of India
(D) Chief Election Commissioner

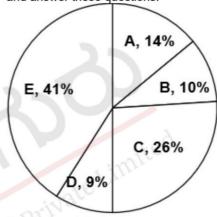69. If $a^2 + a + 1 = 0$, then what is the value of $a^5 + a^4 + 1$?
(A) 1 (B) 0
(C) a + 1 (D) a^2

70. The French East India Company was formed in _____.
(A) 1600 (B) 1660
(C) 1664 (D) 1668

71. If '>' denotes '+', '<' denotes '–', '+' denotes '÷', '^' denotes 'x', '–' denotes '=', 'x' denotes '>' and '=' denotes '<'. Choose the correct statement of the following?
(A) 12 + 4 ^ 2 = 6 ^ 4 + 2
(B) 13 > 7 > 6 + 2 = 3 ^ 4
(C) 9 > 5 > 4 – 18 + 9 > 16
(D) 9 < 3 < 2 > 1 × 8 ^ 2

72. Two components of ecosystem are _____.
(A) Herb and shrub (B) Abiotic and biotic
(C) Frog and Human (D) Plant and animal

73. $\sqrt{6+\sqrt{6+\sqrt{6}}} +......$ is equal to?
(A) 3 (B) 2
(C) 1.5 (D) 2.5

Direction 74 and 75: In the following question, based on the given statement which of the following conclusion(s) is/are follow.
Give answer:
(A) If only I follows
(B) If only II follows
(C) Both I and II are follow
(D) Neither I nor II follows

74. Statements: I. No S is G.
II. All G are C.
III. All C are J.
Conclusions: I. At least some S are C
II. At least some J are G

75. Statements: I. No S is G.
II. All G are C.
III. All C are J.
Conclusions: I. No S is J.
II. All G are J.

76. 9√3 cm What is the height of an equilateral triangle with side?
(A) 13.5 cm (B) 14 cm
(C) 15.5 cm (D) 21 cm

77. Jazya was reimposed during the reign of _____.
(A) Akbar (B) Aurangzeb
(C) Jahangir (D) Humayun

Direction 78 to 80: Revenue earned by the Central Government is given in pie-chart. Study the pie-chart and answer these questions.

A = Custom duty
B = Other
C = Income Tax
D = Corporation Tax
E = Excise Duty

78. What is the ratio of revenue earned from custom duty and Income tax?
(A) 13 :7 (B) 7 : 13
(C) 20 :21 (D) 21 : 20

79. If the income of Central Government from excise duty is 28618 crores, then what is the total revenue of the government?
(A) 58900 crores (B) 47200 crores
(C) 69800 crores (D) 45600 crores

80. What is the ratio of revenue of Central Government earned from the corporation tax and the income tax?
(A) 26 :9 (B) 9 : 26
(C) 10 : 9 (D) 7 : 13

81. Bijapur is known for its _____.
(A) Heavy rainfall
(B) Rock Temple
(C) Gol Gumbad
(D) Statue of Gomateshwara

82. Which one of the following diagrams represents the correct relationship among House, Bedroom, Bathroom?

(A)   (B)   (C)   (D)

83. Red colour of blood is due to presence of _____.
(A) Plasma
(B) Hemoglobin
(C) RBC
(D) WBC

84. The angle of elevation of the top of a chimney and roof of the building from a point on the ground are x° and 45° respectively. The height of building is 'h' metre. Then what is the height (in metre) of chimney?
(A) hcot x + h
(B) hcot x – h
(C) htan x – h
(D) htan x + h

85. In the following question, based on the given statement which of the following argument(s) is/are strong.
Statement: Should there be complete ban of manufacture of five crackers in India?
Arguments: I. No, this will render thousands of workers jobless.
II. Yes, the five cracker manufacture use child labour to a large extent.
(A) If only I is strong
(B) If only II is strong
(C) Both I and II are strong
(D) Neither I nor II is strong

86. 'Daskumar Charitam' was composed by _____.
(A) Surdas
(B) Dandin
(C) Tulsidas
(D) Kalidas

87. World Ozone Day is observed on which date?
(A) 16 September
(B) 19 August
(C) 19 September
(D) 23 July

88. 16 men can do a piece of work in 10 days. How many men will be needed to complete the work in 20 days?
(A) 6
(B) 8
(C) 12
(D) 10

89. In the following question, based on the given statement which of the following argument(s) is/are strong.
Statement: Should there be a complete ban on mining coal in India?
Arguments: I. Yes, the present stocks of coal will not last long, if we continue mining at the present rate.

II. No, we do not have alternate energy source of sufficient quantity.
(A) If only I is strong
(B) If only II is strong
(C) Both I and II are strong
(D) Neither I nor II is strong

90. Who was the court poet of Samudragupta?
(A) Asvaghosha
(B) Nagarjuna
(C) Aryabhatta
(D) Harisena

91. What is the average of even numbers from 1 to 50?
(A) 24
(B) 26
(C) 27
(D) 29

92. In India, the President is elected by _____.
(A) Direct Election
(B) Single Transferable Vote
(C) Proportional Vote System
(D) Open Ballot System

93. MS-Word is an example of _____.
(A) Operating system
(B) Application software
(C) Processing device
(D) Input device

94. Which cricketer is called Rawalpindi Express?
(A) Imran Khan
(B) Wasim Akram
(C) Saqlain Musthaq
(D) Shoaib Akhtar

95. World longest sandstone cave had discovered in _____.
(A) Meghalaya
(B) Tripura
(C) Assam
(D) Nagaland

96. Finance Commission is appointed under _____.
(A) Article 240
(B) Article 180
(C) Article 340
(D) Article 280

97. World Refugee Day is celebrated on _____.
(A) 20th June
(B) 21st June
(C) 22nd June
(D) 19th June

98. Which Indian institute is set to establish its first international flagship centre in Dubai?
(A) IIT Bombay
(B) IIT Delhi
(C) IIT Madras
(D) IIT Kanpur

99. Which state is called the 'Rice Bowl' of India?
(A) Andhra Pradesh
(B) Tamil Nadu
(C) Kerala
(D) Karnataka

100. "My life, My Mission" is the autobiography of _____.
(A) Baba Ramdev
(B) Arvind Kejriwal
(C) Rajnath Singh
(D) Subramanian Swamy

స్పర్ధాగురు

Spardhaguru India Private Limited

Name:

Mobile: Ph No:

Subject: Date of Exam:

ROLL NO.

MOBILE NUMBER

Important Instructions

Correct Method   **Wrong Method**

- Marks should be dark and completely fill the circle.
- Rough work must not be done on the answer sheet.
- Make the marks only in the space provided.
- Please do not make any stray marks on the answer sheet.

	A	B	C	D

Questions 1–100 with options A B C D

Correct	
Incorrect	
Marks	

Student's Signature	Maximum Marks	Marks Obtained	Marks in %	Remarks