1.	AISSEE – 2021

Section A – Mathematics

1. Simplify $7 + 5 - 2 \times (7 + 89) - 94 \div 2 + (33 \div 3 + 9 \times 2 - 7) \div 11 = $ _____.
   (a) 254   (b) - 225
   (c) - 235   (d) 245

2. The average weight of 20 boys in a class is 160 kg and that of the remaining 5 boys is 50 kg. Find the average weight of all the boys in the class.
   (a) 138 kg   (b) 183 kg
   (c) 140 kg   (d) 150 kg

3. The average marks obtained by 7 students in a group is 226. If the marks obtained by six of them are 340, 180, 260, 56, 275 and 307 respectively, find the marks obtained by the seventh student.
   (a) 160   (b) 162
   (c) 163   (d) 164

4. Simplify $(8 + 4 - 2) \times (17 - 12) \times 10 - 89$ = _____.
   (a) 3950   (b) 411
   (c) 412   (d) 3949

5. Simplify $0.05 + 1.5 \times 5 \div 10 \times 0.5 = $ ___
   (a) 4.25   (b) 4.5
   (c) 0.425   (d) 0.42

6. Average of 1, 3, 5, 7, 9, 11, 13 is
   (a) 7   (b) 8
   (c) 7.5   (d) 8.5

7. If x% of y is 100 and y% of z is 200, then find the relation between x and z.
   (a) z = x   (b) 2z = x
   (c) z = 2x   (d) z = 3x

8. One – fourth of one-third of two-fifth of a number is 15. What will be 40% of that number?
   (a) 140   (b) 150
   (c) 180   (d) 200

9. A library has an average of 510 visitors on Sundays and 240 on other days. The average number of visitors in a month of 30 days starting with Sunday is
   (a) 280   (b) 285
   (c) 290   (d) 295

10. A batsman makes a score of 87 runs in the 17th match and thus increases his average by 3. Find his average after the 17th match.
    (a) 36   (b) 37
    (c) 38   (d) 39

11. Reena took a loan Rs. 1,200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?
    (a) 3.6   (b) 6
    (c) 18   (d) 10

12. Write the name of the angle formed when the clock time is 7:15 pm.
    (a) Acute angle
    (b) Right angle
    (c) Obtuse angle
    (d) Straight angle

13. If 15% of 40 is greater than 25% of a number by 2, then the number is
    (a) 14   (b) 16
    (c) 18   (d) 20

14. Find the length of a rectangular playground in cm whose area is 700 sq.m. and breadth is 25 m.
    (a) 28   (b) 280
    (c) 2800   (d) 2500

15. In the morning, the temperature was $- 10^{\circ}$C and it decreased 3 degrees by the evening. What was the temperature in the evening?
    (a) $- 10^{\circ}$C   (b) $- 23^{\circ}$C
    (c) $-13°$C   (d) $-12°$C

16. A rectangular garden is 185 m long and 220m wide. It has two roads in its centre of uniform width of 4 m, one parallel to its length and the other parallel to its breadth. Find the cost of leveling the roads at Rs. 1.25 per sq. m.
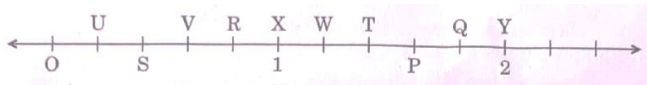
(a) Rs. 3,900 (b) Rs. 3,010

(c) Rs. 4,010 (d) Rs. 2,005

17. The table below shows the maximum temperature is New York City last year. Use the information in this table and answer the following:

What was the average maximum temperature (upto 2 decimals places) of three months May, July and September last year in New York City?

Month	Jan	Mar	May	Jul	Sept	Nov
Max. temp. in °C	3	9	21	29	24	11

(a) 21.65°C (b) 24.66°C

(c) 25.52°C (d) 26.23°C

18. The angle subtended by the diameter of a semicircle on any point on the circle is

(a) 45° (b) 180°

(c) 90° (d) 60°

19. A big cube has each portion of 44 cm. Tiny cubes of 4 cm portion each are cut from that. Then how many tiny cubes will be formed that are surrounded by at least one cube?

(a) 888 (b) 729

(c) 164 (d) 33

20. One decimeter is equal to

(a) 1×10^{-1} m (b) 1×10^{-2} m

(c) 1×10^{2} m (d) 1×10^{3} m

21. In Roman numeration, if a symbol is repeated, its value is not multiplied as many times as it occurs.

(a) True (b) False

(c) Cannot say

(d) Both are equal

22. What is the value of 945.341 - 1042.792 + 875.435 + 31.025 ?

(a) 908.004 (b) 810.008

(c) 795.659 (d) 809.009

23. A rectangular tank 15 cm long, 12 cm wide and 8 cm high was completely filled with water. Find the volume of water in the tank.

(a) 180 cm³ (b) 1200 cm³

(c) 440 cm³ (d) 1440 cm³

24. Which option shows fractions arranged in ascending order?

(a) $\frac{5}{8} < \frac{7}{12} < \frac{3}{4} < \frac{13}{16}$

(b) $\frac{5}{8} < \frac{7}{12} < \frac{13}{16} < \frac{3}{4}$

(c) $\frac{5}{8} < \frac{3}{4} < \frac{13}{16} < \frac{7}{12}$

(d) $\frac{7}{12} < \frac{5}{8} < \frac{3}{4} < \frac{13}{16}$

25. It takes Julia $\frac{1}{2}$ hour to wash, comb her hair and put on her clothes and hour to $\frac{1}{4}$ have her breakfast. How much time does it take Julia to be ready for school?

(a) $\frac{3}{4}$ hour (b) 1 hour

(c) $\frac{2}{4}$ hour (d) $\frac{5}{4}$ hour

26. Which of the following numbers in Roman Numerals is incorrect?

(a) LXII (b) XCI

(c) LC (d) XLIV

27. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is

(a) 35.55 km/hr

(b) 36 km/hr

(c) 71.11 km/hr

(d) 71 km/hr

28. On dividing 2272 as well as 875 by a 3 -digit number N, we get the same remainder. The sum of the digits of N is

(a) 10 (b) 11

(c) 12 (d) 13

29. The difference between two complementary angles is 10°. Calculate the values of both the angles.

(a) 55°, 45° (b) 40°, 50°

(c) 50°, 60° (d) 100°, 90°

30. The total weight of brinjal, lady-finger and onion is 48.057 kg. If brinjal and lady-finger weigh 5.35 kg and 24.52 kg respectively, find the weight of onion.

(a) 17.187 kg

(b) 18.187 kg

(c) 17.180 kg

(d) 18.180 kg

31. How many faces are there in a cuboid?

(a) 6   (b) 12

(c) 8   (d) 4

32. A flat surface which extends indefinitely in all directions is called a

(a) Plane   (b) Line

(c) Line segment   (d) Point

33. The points 0, U, S, V, R, X, W, T, P, Q and Y on the number line are equidistant. The fraction represented by length OP is

(a) $\frac{1}{5}$ (b) $\frac{7}{5}$

(c) $\frac{4}{5}$ (d) $\frac{6}{5}$

34. The two consecutive integers, between which the fraction $\frac{5}{7}$ lies are

(a) 0 and 1   (b) 5 and 7

(c) 5 and 6   (d) 6 and 7

35. Which of the following is the smallest fraction?

(a) $\frac{4}{5}$ (b) $\frac{5}{3}$

(c) $\frac{5}{6}$ (d) $\frac{5}{2}$

36. Whole numbers are closed under which operation?

(a) Subtraction

(b) Division

(c) Multiplication

(d) All of these

37. The successor of 1 million is

(a) 2 million

(b) 1000001

(c) 100001

(d) 10001

38. Find the smallest number that is divisible by each one of 9, 12 and 15.

(a) 60

(b) 90

(c) 120

(d) 180

39. A certain brand of soap-powder is sold at Rs.15 per packet. It costs Rs.144 a dozen. What is the profit in percent on 8 dozen packets?

(a) 20

(b) 25

(c) 24

(d) 36

40. Find the greatest number that will divide 37, 56, 93 leaving remainder 1, 2 and 3 respectively.

(a) 9

(b) 18

(c) 15

(d) 12

41. The HCF and LCM of two numbers are 6 and 864 respectively. If one number is 96, find the other number.

(a) 84

(b) 45

(c) 54

(d) 24

42. The HCF of two numbers is 12 and their difference is 12. Which of the following can be the numbers?

(a) 84, 96

(b) 66, 78

(c) 70, 82

(d) 62, 78

43. 21 goats eat as much as 15 cows. How many goats eat as much as 35 cows?

(a) 38

(b) 49

(c) 37

(d) 41

44. A mechanic earns Rs.36,000 on 9 cars. How much will he earn in 1 day, if in a day he receives 27 cars?

(a) Rs.1,08,000

(b) Rs.1,80,000

(c) Rs.1,00,800

(d) Rs.1,00,080

45. If x : y = 3 : 5, find the ratio 3x + 4y : 8x + 5y.

(a) 39 : 49

(b) 29 : 50

(c) 29 : 49

(d) 39 : 50

46. If 10 men can do a piece of work in 4 days, how many men will be required to get the same work done in 5 days?

(a) 10

(b) 8

(c) 40

(d) 12

47. If a boy sells a book for Rs.450, he makes a loss of 10%. To gain 10%, what should be the selling price?

(a) Rs. 500

(b) Rs. 600

(c) Rs. 550

(d) Rs. 525

48. A man sells one speaker for Rs.7,500 at a profit of 20% and another speaker for Rs.8,100 at a loss of 10%. Find his total loss or profit.

(a) Loss = Rs.300

(b) Loss = Rs.350

(c) Profit = Rs.300

(d) Profit = Rs.350

49. Find the value of m, if 3, 18, m, 42 are in proportion.

(a) 6

(b) 7

(c) 54

(d) 252

50. In an NCC Camp, 1200 trainees are participating out of which 900 are selected for Republic Day Camp. What is the ratio between the number of selected and non-selected cadets?

(a) 300 : 120

(b) 4 : 1

(c) 3 : 1

(d) 120 : 130

Section – B General Knowledge

51. Which of the following will dissolve in water?

(a) Soil

(b) Chalk Powder

(c) Sugar

(d) Oil

52. Which of the following is a communicable disease?

(a) Diabetes

(b) Chicken pox

(c) Alzheimer's

(d) Cancer

53. To climb the mountains, we have to

(a) Bend forward

(b) Bend backwards

(c) Walk straight

(d) Walk sideways

54. Seeds of drumstick and maple are carried over long distances by wind because they possess

(a) winged seeds

(b) large and hairy seeds

(c) long and ridged fruits

(d) spiny seeds

55. _____ is a traditional rainwater harvesting technique of Rajasthan.

(a) Taanka

(b) Khadin

(c) Bavadi

(d) Kuan

56. Rasgulla is a popular sweet of _____.

(a) West Bengal

(b) Punjab

(c) Kerala

(d) Himachal Pradesh

57. Which of the following is a tribal community of India?

(a) Pandits

(b) Jaat

(c) Bhil

(d) Punjabi

58. Name an astronomical observatory built in the 18th century by Rajput King Sawai Jai Singh of Rajasthan.

(a) Red Fort

(b) Qutub Minar

(c) Jantar Mantar

(d) Taj Mahal

59. _____ includes internal rocks, minerals, etc.

(a) Atmosphere

(b) Biosphere

(c) Hemisphere

(d) Geosphere

60. The remains of plants and animals that were buried millions of years ago are known as

(a) potential reserves

(b) fossil fuels

(c) biomass fuel

(d) animate power

61. Who was the first Indian to be the President of U.N. General Assembly?

(a) Natwar Singh

(b) V.K. Krishna Menon

(c) Smt. Vijaya Lakshmi Pandit

(d) Smt. Indira Gandhi

62. In which of the following parts of the human body are sweat glands absent?

(a) Scalp

(b) Armpits

(c) Lips

(d) Palms

63. What do we call the young one of a Kangaroo?

(a) Foal

(b) Colt

(c) Joey

(d) Cub

64. Clouds are mostly made of

(a) snow

(b) dust

(c) water droplets

(d) smog

65. For which of the following works has Vasdev Mohi been awarded the 29th Saraswati Samman?

(a) Lost Children Archive

(b) Cheque book

(c) The Stranger Diaries

(d) A Song for a New Day

66. From which monument did India adopt its National Emblem?

(a) Kapilavastu

(b) Hastinapur

(c) Sarnath

(d) Panipat

67. In which of the following styles of dance is the story/theme always taken from Mahabharata and Ramayana?

(a) Mohiniyattam

(b) Odissi

(c) Bharatanatyam

(d) Kuchipudi

68. Arrange the months based on our National Calendar (Saka Era) in correct serial order —

a. Chaitra

b. Vaishakha

c. Jyaishtha

d. Aashada:

(a) abcd

(b) bcda

(c) dacb

(d) cdab

69. Which one of the following is a combat aircraft?

(a) Tejas

(b) Boeing C-17 Globemaster III

(c) Dhruv

(d) Chetak

70. Which device is used to measure the speed of vehicles?

(a) Gravimeter

(b) Speedometer

(c) Gyroscope

(d) Kilometer

71. Which of the following is domesticated in poultry farms?

(a) Goat

(b) Sheep

(c) Hen

(d) Horses

72. The cover the tongue and react to chemicals in food.

    (a) Taste Buds

    (b) Sphincters

    (c) Teeth

    (d) Skin

73. What does freezing do when preserving foods?

    (a) Keep the food product hard

    (b) Keep the flavor of the food fresh

    (c) Stops growth of micro-organisms

    (d) None of the above

74. Which of the following cups/trophies is associated with football?

    (a) Davis Cup

    (b) Champions Trophy

    (c) Santosh Trophy

    (d) Deodhar Trophy

75. How do ants recognize ants from their group?

    (a) By colour

    (b) By face

    (c) By smell

    (d) By height

SECTION - C LANGUAGE

(Only for those attempting English Language)

Read the following passage and answer the questions (Q. 76 - 78) by choosing the most appropriate option:

Zeus and Prometheus

From the very first, humans had trouble with the Greek Gods. Most Gods thought of humans as toys. But Gods made friends with the humans. One of those Gods was Prometheus. The first people created by the Gods lived happily together. They thought the Gods were wonderful. But their children were not as grateful or as content. The children argued among themselves, and sometimes even argued with the Gods. Zeus was very disappointed at mankind. He decided to punish mankind by depriving them of a very important tool — fire. Prometheus felt sorry for his human friends. Fire was important for many things such as heat and cooking. Prometheus stole a lightning bolt from Zeus and gave it to mankind. That's when man discovered fire.

Zeus was furious as Prometheus had defied Zeus. He ordered Prometheus be chained to a rock as punishment for stealing his lightning bolt, and for going behind his back to help the humans. To make Prometheus even more miserable, Zeus sent storms to beat angry waves against Prometheus, helplessly chained to his rock. Zeus made the sun shine really brightly now and then to burn his skin. It was Hercules who finally released the helpless God from his chains.

76. What is the meaning of the underlined word: 'Prometheus had **defied** Zeus'?

    (a) Prometheus had worshipped Zeus all his life.

    (b) Prometheus had defamed Zeus.

    (c) Prometheus detested Zeus for his attitude.

    (d) Prometheus had disregarded the authority of Zeus.

77. Which of the following statements is **not** true about Zeus and Prometheus?

    (a) Most Greek Gods saw humans as a means of their entertainment.

    (b) Prometheus was chained to a rock as he was a God.

    (c) Zeus was an unforgiving God who did not like to be disobeyed.

    (d) Hercules emerged as the savior of Prometheus.

78. Why was Zeus angry and disappointed at humans?

    (a) They kept asking him for fire.

    (b) The humans misused his lightning bolt.

    (c) The humans were quarrelsome and didn't respect the Gods.

(d) The humans were not intelligent enough to discover fire.

Fill in the blanks with the most appropriate option.

79. There was no one else in the room _____ Collin.

    (a) accept

    (b) except

    (c) axcept

    (d) acept

80. The news is all _____ the internet.

    (a) on

    (b) through

    (c) over

    (d) near

81. We studied about _____ Roman Empire in school.

    (a) a

    (b) an

    (c) the

    (d) no article

Rearrange the following words/phrases to make meaningful sentences. Choose the correct sequence.

82. the sun (A)/ you (B)/ of (C)/ must(D)/ stay out(E).

    (a) ECADB

    (b) ABCDE

    (c) BDECA

    (d) DECAB

83. I (A)/ immediately (B)/ salary (C)/ my (D)/ want (E)

    (a) BAEDC

    (b) AEDCB

    (c) DCAEB

    (d) EADCB

84. Choose the word that means the opposite of **MORTAL.**

    (a) Unmortal

    (b) Immortal

    (c) Inmortal

    (d) Dismortal

85. A _____ of thieves was caught by the Police.

    (a) swarm

    (b) pack

    (c) team

    (d) batch

86. It has become his habit to _____ do his homework and then copy it from others.

    (a) always

    (b) often

    (c) frequently

    (d) never

87. There were several _____ at the conference.

    (a) women

    (b) woman

    (c) wemens

    (d) womans

88. 'To beat around the bush' means

    (a) to turn violent against a stranger.

    (b) to avoid saying something because it is uncomfortable.

    (c) to come to the main point of the conversation.

    (d) to start a fire in the forest.

89. My father is a bookworm, he _____books to films and sports.

    (a) is prefer

    (b) prefer

    (c) prefers

    (d) are prefer

90. Choose the most appropriate option: Which of the following options is the meaning of the word 'exhausted'?

    (a) Very hot

    (b) Very polluted

    (c) Very fresh

    (d) Very tired

91. A confectioner is a person who _____

    (a) sells tools

    (b) sells confetti

    (c) sells sweets

(d) sells clothes

92. The captain _____ along with the players.

(a) was present

(b) was presenting

(c) have been presenting

(d) has been presenting

93, Leave your bags at the gate. (Identify the type of sentence)

(a) Imperative

(b) Declarative

(c) Interrogative

(d) Exclamatory

94. Near the equator, the sun _____ greater quantities of water. (Choose the correct form of the verb)

(a) is evaporating

(b) evaporates

(c) has evaporated

(d) evaporate

95. Choose the correct spelling:

(a) appartment

(b) aparttment

(c) apartment

(d) apartmant

96. Today is the _____ day of my life. (Choose the correct adjective)

(a) more important

(b) less important

(c) important

(d) most important

97. Poets are known to fly in their thoughts. (Choose the word nearest in meaning to the underlined word)

(a) sore

(b) sour

(c) soar

(d) sure

98. Do as directed: There are some diseases that are inherited. (Identify the kind of Noun)

(a) 'diseases' is a proper noun

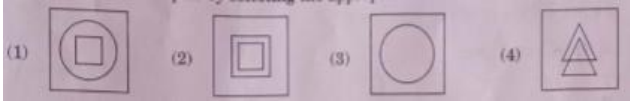(b) 'diseases' is an abstract noun

(c) 'diseases' is a collective noun

(d) 'diseases' is a common noun

99. After school you and _____ must discuss a few things. (Choose the correct pronoun)

(a) him

(b) me

(c) I

(d) we

100. It is quite warm, _____? **(Use a Question Tag)**

(a) is it

(b) wasn't it

(c) isn't it

(d) was it

Section – D (Intelligence Test)

101. If '+' means "Minus", '-' means "Multiply", '×' means "Add", then what is the value of $10 \times 5 + 3 - 2$?

(a) 24

(b) 52

(c) 9

(d) 10

102. mend : sewing : : edit : _____

(a) darn

(b) repair

(c) manuscript

(d) makeshift

103. Fill in the blank. rein : horse : : control panel : _____

(a) pilot

(b) bit

(c) plane

(d) rider

104. Choose the word which is least like the words in the group.

(a) MS Paint

(b) Facebook

(c) WhatsApp

(d) Twitter

105.

Complete the second pair by selecting the appropriate alternative

106. A man walks 6 km south, turns left and walks 4 km, again turns left and walks 5 km.
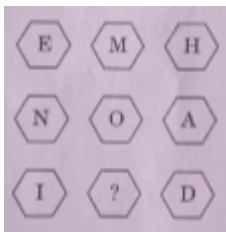   (a) South
    (b) North
    (c) East
    (d) West

107. Choose the word that is a necessary part of the underlined word. **GUITAR**
    (a) Band
    (b) Teacher
    (c) Songs
    (d) Strings

108. The priest told the devotee, "The bell rings at regular intervals of 45 minutes. The last bell rang 5 minutes ago. The next bell is due to be rung at 7 : 45 am." At what time did the priest give this information to the devotee?
    (a) 6 : 55 am
    (b) 7 : 00 am
    (c) 7 : 05 am
    (d) 7 : 40 am

109. Which letter replaces the question mark?

    (a) N
    (b) O
    (c) P
    (d) M

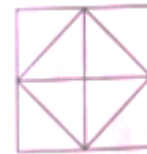110. In a code, 'BOMBAY' is coded as 'CNNABX', then what will be the code of 'DELHI'?
    (a) EDMJG
    (b) GMDEJ
    (c) DEGMJ
    (d) EDMGJ

111. Fill in the blank. segregate : unify : : repair : _____
    (a) approach
    (b) push
    (c) damage
    (d) outwit

112. How many triangles are there in the figure given below?

    (a) 4
    (b) 12
    (c) 16
    (d) 10

113. Rahul started walking straight towards East. He walks a certain distance and then turns towards his right and walk again. In which direction is he heading now?
    (a) North
    (b) East
    (c) South
    (d) West

114. From the given options, choose the odd one out.
    (a) Bangladesh : Taka
    (b) Brazil : Real
    (c) Cyprus : Dollar
    (d) Iran : Rial

115. Tanya is older than Eric.
    Cliff is older than Tanya.
    Eric is older than Cliff.
    If the first two statements are true, the third statement is
    (a) True
    (b) False
    (c) Uncertain
    (d) None of these

116. What comes next in the given series?

A, C, F, H, K, M,………..

(a) N

(b) Y

(c) P

(d) M

117. A is B's sister. C is B's mother. D is C's father. E is D's mother. Then how is A related to D?

(a) Grandfather

(b) Grandmother

(c) Daughter

(d) Grand-daughter

118. In a certain code language, COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language?

(a) MFEDJJOE

(b) EOJDEJFM

(c) MFEJDJOE

(d) EOJDJEFM

119. If South-East becomes North, North-East becomes West and so on, what will West become?

(a) North-East

(b) North-West

(c) South-East

(d) South-West

120. What will come at the place of the question mark? 10, 100, 200, 310, ?

(a) 420

(b) 410

(c) 430

(d) 400

121. Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it?

_ ab _ b _ aba _ _ abab.

(a) abbaa

(b) bbaab

(c) abaab

(d) aaaba

122. Look at this series: 2, 1, (1/2), (1/4)…. What number should come next?

(a) 1/3

(b) 1/8

(c) 2/8

(d) 1/16

123. Choose the correct alternative that has the same relation. SCD, TEF, UGH, _____, WKL

(a) CMN

(b) UJI

(c) VIJ

(d) IJT

124. If 'WAY' is coded as 679, 'MAY' is coded as 579, the 'YAW' will be coded as

(a) 976

(b) 769

(c) 679

(d) 579

125. In a class of 45 students, Amir's rank from the top is 16th. Ashok is 6 ranks below Amir. What is Ashok's rank from the bottom?

(a) 23rd

(b) 32nd

(c) 24th

(d) 30th

Hints and Solutions

1. (b) $7 + 5 - 2 \times (7 + 89) - 94 \div 2 + (33 \div 3 + 9 \times 2 - 7) \div 11$
   - 225

2. (a) Total Weight of 20 boys = 20×160 kg
   Total Weight of rest 5 boys = 5×50 kg
   Average weight of the whole class
   $= 20 \times 160 + 5 \times 50 \div 25$
   $= 3200 + 250 \div 25$
   $= 138$ kg

3. (d) Sum of marks or 7 students = Mean × Number of student
   Sum of marks or 7 students = 226×7
   $= 1582$
   Now, total marks of 6 students = (340 + 180 + 260 + 56 + 275 + 307) = 1418
   Therefore, Marks obtained by Seventh Student = Total marks of seven students – Total marks of six studens
   $= 1582 - 1418 = 164$

4. (b) $(8 + 4 - 2) \times (17 - 12) \times 10 - 89$
   $= 10 \times 5 \times 10 - 89$
   $= 500 - 89$
   $= 411$

5. (c)

6. (a) Mean $= \dfrac{\text{Sum of terms}}{\text{Numbers of term}}$
   $= \dfrac{1+3+5+7+9+11+13}{7}$
   $= 7$

7. (c) It is, y% of z = 2(x% of y)
   $\dfrac{yz}{100} = \dfrac{2xy}{100}$
   $z = 2x$

8. (c) $\dfrac{1}{4} \times \dfrac{1}{3} \times \dfrac{2}{5} \; x = 15$
   Then $x = 15 \times 30 = 450$
   40% of 450 = 180

9. (b) Since the month begins with a Sunday, so there will be five Sundays in the month,
   Required average $= \dfrac{510 \times 5 + 240 \times 25}{30}$
   $= \dfrac{8550}{30} = 285$

10. (d) Let the average after 17th match is x then the average before 17th match is x – 3.
    So, 16 (x – 3) + 87 = 17x
    x = 87 – 48 = 39

11. (b) Let rate = R% and time = R years
    Then, $\left(\dfrac{1200 \times R \times R}{100}\right) = 432$
    $12 R^2 = 432$
    $R^2 = 6$

12. (c)

13. (b) Let the number be x
    $\dfrac{15}{100} \times 40 - 2 = \dfrac{25}{100} x$
    $600 - 200 = 25x$
    $x = 16$

14. (a) Breadth = 25 m
    Area of rectangle is , $l \times b = 700$
    $$l = \dfrac{700}{25} = 28$$

15. (c)

16. (d) Area of the roads = $185 \times 4 + 220 \times 4 - 4 \times 4$ m²
    $= 1604$ m²
    Total cost of leveling = Rs.1.25 × 1604
    $= $ Rs.2005

17. (c)

18. (b) The semicircle is half of the circle, hence the diameter of the semicircle will be a straight line subtending 180 degrees.

19. (b) Total length of cube is divided into $\dfrac{44}{4}$ = 11 parts
    So, the parts left on each side that are surrounded by at least one cube = 9
    No. of cubes formed such that each face the cubes is $9^3 = 729$

20. (a)

21. (b) False. If a symbol is repeated, its value is added as many times as it occurs: i.e. II is equal 2, XX is 20 and XXX is 30

22. (b)

23. (d) The volume of a cuboid is = $l \times w \times h$

In a rectangular tank, length = 15 cm, width = 12cm and height = 8 cm

So, the volume is = 15 cm × 12 cm × 8 cm

= 1440 cm^3

24. (d) $\frac{5}{8}, \frac{7}{12}, \frac{3}{4}, \frac{13}{16}$

8 = 2 × 2 × 2

12 = 2 × 2 × 3

4 = 2 × 2

16 = 2 × 2 × 2 × 2

LCM = × 2 × 2 × 2 × 3 = 48

$\frac{5}{8} = \frac{30}{48}, \frac{7}{12} = \frac{28}{48}, \frac{3}{4} = \frac{36}{48}, \frac{13}{16} = \frac{39}{48}$

28 < 30 < 36 < 39

$\frac{7}{12} < \frac{5}{8} < \frac{3}{4} < \frac{13}{16}$

25. (a) The total time for Julia to be ready for school is $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$ of an hour.

26. (c) LC

27. (c) Total time taken = $\left(\frac{160}{64} + \frac{160}{8}\right)$ hrs

$= \frac{9}{2}$ hrs

Average speed = $\left(320 \times \frac{2}{9}\right)$ km.hr

= 71.11 km/hr

28. (a) Clearly, (22272 – 875) = 1397, is exactly divisible by N.

Now, 1397 = 11 × 127

The required 3 – digit number is 127, the sum of whose digits is 10.

29. (b)

30. (b)

brinjal + lady finger + onion = 48.057kg

brinjal = 5.35kg

lady finger = 24.52kg

onion = 48.057 - 5.35 - 24.52kg = 18.187kg

hence, the required weight is 18.187kg

31. (a)

32. (a)

33. (c)

34. (a) A fraction whose numerator is less than the denominator is called a proper fraction.

So, $\frac{5}{7} = 0.715$

Therefore, $\frac{5}{7}$ lies between o and 1.

35. (a)

36. (c)

37. (c) 1 million =100000

The successor of 1 million

=100000+1=100001

38. (d)

2	9	12	15
2	9	6	15
3	9	3	15
3	3	1	5
7	1	1	5
	1	1	1

LCM = 2 x 2 x 3 x 3 x 5

LCM = 180

39. (b) Selling Price (SP) = Rs. 15 Per Packet

Cost Price (CP) = Rs.144 a dozen

According to the questions:

SP = 1 Packet Rs.15

1 dozen = 12 Packets

= 12 × 15 = Rs.180

CP = 1 dozen Rs.144

So, its profit

Profit = SP – CP

= 180 – 144 = Rs.36

Profit Percentange = $\frac{\text{Profit}}{\text{CP}} \times 100$

$= \frac{36}{144} \times 100$

= Rs.25%

40. (b) So, 37 – 1 = 36,

56 – 2 = 54

93 – 3 = 90

HCF (36, 54, 90)

36 = 2 × 2 × 3 × 3

54 = 2 × 3 × 3 × 3

90 = 2 × 3 × 3 × 5

HCF (36, 54, 90) = 2 × 3 × 3 = 18

18 is the greatest number that will divide 37, 56 and 93 leaving the remainder 1, 2 and 3 respectively.

41. (c) HCF of two numbers = 6

LCM of two numbers = 864

One of the number = 96

Let the other number be x

We know that

HCF × LCM = Product of two numbers

6 × 864 = 96 × x

$x = \dfrac{6 \times 864}{96}$

$x = 54$

42. (a)

43. (b)

44. (a)

45. (c) x : y = 3 : 5

Let x = 3k, y = 5k

$\dfrac{3x+4y}{8x+5y} = \dfrac{3(3k)+4(5k)}{8(3k)+5(5k)}$

$= \dfrac{9k+20k}{24k+25k}$

$= \dfrac{29}{49}$

46. (b) No. of men required to a piece of work on 4 day = 10

No. of men required to do a piece of work in $4 \times \dfrac{5}{4} = 5$ days

$= 10 \div \dfrac{5}{4}$

$= 10 \times \dfrac{4}{5} = 8$

47. (c) Selling Price $= \dfrac{(100+Gain\%)}{100} \times C.P$

Selling Price $= \dfrac{(100+10)}{100} \times 500$

Selling Price $= \dfrac{(110)}{100} \times 500$

Therefore, Selling Price = Rs.550

48. (d)

49. (b)

50. (c)

51. c	52. b	53. a	54. a	55. a
56. a	57. c	58. c	59. d	60.b
61. c	62. c	63. c	64. c	65. b
66. c	67. c	68. a	69. a	70. b
71. c	72. a	73. c	74. c	75. c
76. d	77. d	78. c	79. b	80. c
81. c	82. c	83. b	84. b	85. b
86. d	87. a	88. b	89. c	90. d
91. c	92. a	93. a	94. b	95. c
96. a	97. c	98. c	99. c	100. c`
101. c	102. c	103. c	104. a	105. b
106. b	107. d	108. c	109. d	110. d
111. c	112. b	113. c	114. c	115. c
116. d	117. d	118. d	119. c	120. c
121. d	122. b	123. c	124. a	125. c