AP ICET May 7, 2025 Shift-1

Analytical Ability

Instructions [1 - 20]

In the following questions a question is followed by data in the fonn of two statements labelled as I and II. You have to decide whether the data given in the statement is sufficient to answer the questions.

1. **Is the natural nurnber 'n' a perfect square ?**

I. 'n' leaves remainder 2 when divided by 4.

II. 'n' ends with zero.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

2. **What is the length of the side AC in the isosceles triangle ABC?**

I. $\angle C = 90^\circ$

II. $AB = 10$ 2

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

3. **What is the selling price of the a1ticle A?**

I. Cost price of A is Rs.120.

II. Discount on the marked price of A is Rs. 30.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: D

4. **In a class of 60 students, each one plays either cncket or hockey. How many play cricket only?**

I. 30 students play both the games.

II. 10 students play hockey only.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

5. **What is the total cost of 2 benches and 3 chairs?**

I. Cost of 2 benches is Rs. 600 more than the cost of 3 chairs.

II. Cost of a chair is Rs.200 less than $\frac{2}{3}$ *rd* **of the cost of a bench.**

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: D

II. x = 2y

6. **What is the value of**

I. x > y

$x^3+y^3+xy^2+yx^2$ $x2y2$ **?**

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: D

7. **The speed of a boat in still water is 8 kmph. What distance can it travel in 20 minutes?**
   I. The boat is moving down the stream.
   II. Speed of the current is 2 kmph.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

8. **What is the remainder obtained when the integer N is divided by 60 ?**
   I. $N = (n-2)(n-1)n(n+l)(n+2)$**, where** $n > 1$ **is an integer.**
   II. $500 < N < 2500$

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

9. **Two natual numbers are in the ratio 3 : 7. What is their difference?**
   I. The product of numbers is 1344.
   II. Both numbers are less than 100.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

10. **What is the g.c.d of m and n ?**
I. $m = 2^3 3^2 7^3; n = 3^2 7^x 11^3$
II. $x > 3$

A If the statement I alone is sufficient to answer the question.

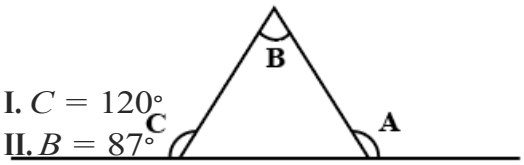
B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

11. **What is the angle A in the following figure?**



I. $C = 120°$
II. $B = 87°$

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

12. **What is the length of the train?**
I. It crosses a pole in 10 seconds.
II. It crosses a bridge of length 100 m in 15 seconds.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

13. **What is the value of 'x'?**
I. $2x - 3y = 4$
II. $y^2 + 2y = -1$

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

14. **Is the set E infinite?**
I. E is a set of natural nurnbers.
II. E is the set of priine divisors of 1 2 3 4 5 6 7

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: B

15. **What is the integral value of 'x'?**
I. $12 < 3x - 3 < 18$
II. $6 < 3x - 3 < 27$

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

16. **What is the slope of the line L?**

I. L passes through the point (1, 1).

II. L makes an angle $45°$ **with** $x - y = 0$**.**

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: D

17. **What is the ratio of** $5x + 3y : 10x + 2y$**?**

I. $x : y = 1 : 2$

II. x, y are real numbers.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

18. **Find the volume of the right pyramid?**

I. Base of the right pyramid is an equilateral triangle of side 4 cm.

II. Height of the pyramid is 8 cm.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

19. **A ladder is placed against a wall. At what. height above the ground does the ladder touch the wall?**
I. The base of the ladder is at a distance of 10 feet from the wall.
II. The ladder makes same angle with the wall and the floor.

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: C

20. **Is** $R1$ **an equivalence relation?**
I. $R1$ **is a relation on real numbers, R, defined by** $(a,b) \in R1 \Leftrightarrow 2 + ab > 0$ **for all** $a,b \in R$
II. $R1$ **is a symmetric relation.**

A If the statement I alone is sufficient to answer the question.

B If the statement II alone is sufficient to answer the question.

C If the statements I and II together are sufficient to answer the question but neither statement alone is sufficient.

D If both the statements I and II together are not sufficient to answer the question and additional data is required.

Answer: A

Instructions [21 - 25]

In each of the following questions, a sequence of numbers or letters that follow a definite pattern is given. Each question has a blank space. This has to be filled by the conect answer from the four given options to complete the sequence without breaking the pattern.

21. **5 : 626 :: 6 : _____**

A 196

B 1297

C 215

D 35

Answer: B

22. **AEF : BIJ :: _____OUV**

A NOP

B MPQ

C NOQ

D NQR

Answer: D

23. $2^2 3^3$: 12 :: $3^4 5^2$: .....

A 8

B 10

C 12

D 15

Answer: D

24. **D⑤F : N⑯R :: R⑳V : F___J**

A ⑦

B ⑧

C ⑨

D ⑩

Answer: B

25. 60° : $\sqrt{3}$ :: 1

A 45°

B 60°

C 30°

D 90°

Answer: A

Instructions [26 - 30]

Pick up the odd thing out in the following options and mark its number as your answer for the question:

A CX

B FU

C AZ

D DV

Answer: D

A Bar chart

B Arithmetic Mean

C Pie chart

D Histogram

Answer: B

A $\frac{DF}{10}$

B $\frac{GH}{15}$

C $\frac{KL}{23}$

D $\frac{YZ}{50}$

Answer: D

A Mean

B Median

C Mode

D Standard deviation

Answer: D

A Beas

B Nanda devi

C Chambal

D Narmada

Answer: B

Instructions [26 - 40]

The following questions follows a definite pattern. Observe the same and fill in the blank with suitable answer.

26. **13, 28, 49, 76,**..... **, 148**

A 89

B 99

C 109

D 79

Answer: C

27. **13, 29, 61, 125, 253,**..... **, 1021**

A 590

B 509

C 702

D 604

Answer: B

28. **6, 15, 35, 77, 143, ...**

A 195

B 203

C 221

D 245

Answer: C

29. **1, 5, 14, 30, 55, ...**

A 80

B 85

C 90

D 91

Answer: D

30. **105, 115, 130, 150, 175, ...**

A 190

B 195

C 200

D 205

Answer: D

31. **8, 24, 12, 36, 18, 54, ...**

A 108

B 162

C 27

D 81

Answer: C

32. **64, 512, 4096,.....,262144**

A 32766

B 32864

C 32768

D 32782

Answer: C

33. 101, 103, 107, 109, ..., 127, 131, 137

A 113

B 117

C 119

D 123

Answer: A

34. 1, 9, 36, 100, ... , 441, 784

A 121

B 144

C 169

D 225

Answer: D

35. $(0,0,1),(6,2,\frac{\pi}{2})(3,\frac{\pi}{2},2)(2,1,0),.....$

A $(3,\frac{2\pi}{2},2)$, $(3,2,\frac{2\pi}{-1})$, $(\frac{2\pi}{-1},2,3)$

B $(3,2,\frac{2\pi}{2})$

C $(3,2,\frac{2\pi}{3})$

D $(3,\frac{2\pi}{2},2)$, $(\frac{2\pi}{3},2,-1)$,

Answer: D

36. **(4, 3), (7, 2), (10, 4), (13, 2),..... , (19, 2)**

A (16, 3)

B (16, 2)

C (16, 4)

D (16, 5)

Answer: D

37. **6, 10 , 8, 12 , 10, 14, ...**

A 16

B 12

C 14

D 10

Answer: B

6, 11 123, 171
27

38. 9 , 14 , 30 , ..., 126 , 174

A 83
86

B 102
105

C 38
41

D 51
54

Answer: D

39. **2, 3, 5, 10, 18, 33,..... , 112, 206, 379**

A 60

B 61

C 62

D 63

Answer: B

40. **124, 342......, 2196, 4912, 6858**

A 1328

B 1332

C 1330

D 1334

Answer: C

Instructions [41 - 43]

The following table gives wheat produced in thousands of tonnes in various countries in five years. Use this data, answer the questions.

Country	2017	2018	2019	2020	2021
India	48	50	46	50	52
China	35	38	40	34	52
Indonesia	40	38	42	44	40
Brazil	42	45	46	44	41
Japan	50	52	48	46	48
Cambodia	42	40	36	38	39

41. **The percentage increase in wheat production of China in the year 2021 when compared to 2019 is**

A 30

B 25

C 35

D 32

Answer: A

42. **Which counuy has minimum average of wheat production from 2017 to 2021?**

A Indonesia

B Cambodia

C China

D Japan

Answer: B

43. The ratio of average wheat production of India and China from 2017 to 2021 is

A $\frac{245}{199}$

B $\frac{246}{199}$

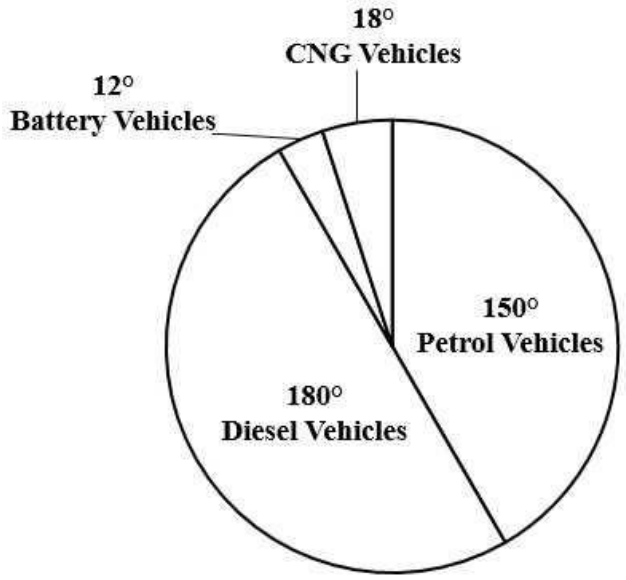
C $\frac{246}{197}$

D $\frac{245}{196}$

Answer: B

Instructions [44 - 46]

The following Pie charts shows the information pertaining to the vehicles which run on Petrol, Diesel, CNG and battery in a city. Using this data, answer the questions.



44. The percentage of vehicles which run on batte1y is

A $\frac{1}{33}$

B 3

C 2

D $\frac{4}{35}$

Answer: A

45. **The total number of vehicles run on battery is 3600, then the number of vehicles which run on diesel is**

A 72000

B 60000

C 54000

D 65000

Answer: C

46. **If the CNG vehicles are 5400 in number, then the number of petrol vehicles is**

A 42000

B 45000

C 48000

D 54000

Answer: B

Instructions [47 - 50]

In a locality consisting of 40 families, a survey is conducted on the subscription to various daily news papers S, E, T which revealed the following infomrntion:
6 families subscribe to only S
3 families subscribe to S and E but not
T 2 families subscribe to S and T but
not E 7 families subscribe to only E
4 families subscribe to E and T but not
S 8 families subscribe to only T
and only one family subscribe to all the three.
Using this infonnation, answer the following questions.

47. **How many fainilies subscribe exactly to none of the papers?**

A 7

B 8

C 9

D 10

Answer: C

48. **The total number of families who subscribe to either E or T or to both but not to S is**

A 19

B 18

C 16

D 15

Answer: A

49. **The number of families who subscribe to S is**

A 10

B 11

C 12

D 13

Answer: C

50. **Number of families subscribing to S or T or both is**

A 21

B 16

C 24

D 19

Answer: C

Instructions [51 - 55]

Each of the following questions used a different coding pattern. Identify the pattern and answer the questions.

51. **If 'OCTOBER' is coded as 'REBOTCO' then what is the code for 'RACECAR'**

A CARRACE

B RACECAR

C ACERCAR

D CERACAR

Answer: B

52. If 'INDIGO' is coded as 'RMWRTL', then the word that is coded as 'KFIKOV'

A MAROON

B PURPLE

C VIOLET

D SILVER

Answer: B

53. If 'SACHIN' is coded as 'OJIDBT', then the code for 'DHONI' is

A JPOEI

B JOPEI

C JOPIE

D JPOIE

Answer: C

54. In a code 'TANK' is written as 'SZOL' and 'FRIEND' is written as 'EQHFOE'. Then the code for 'RING' is

A QHOG

B QHOH

C QHME

D PHON

Answer: B

55. If 'RANK' is coded as 18 1 14 11, then the possible number of letter strings obtained when 21345 is

A 2

B 3

C 4

D 5

Answer: B

Instructions [56 - 60]

In a code, the months January to December are written as December, September, April, October, November,

May, August, March, June, July, February and January respectively. Use this information to answer the questions.

56. Indian Republic Day falls in the month of

A August

B December

C January

D February

Answer: B

57. In this code language the 4th month of the year is

A May

B April

C October

D January

Answer: C

58. The teacher's day is celebrated in the month of

A March

B September

C August

D June

Answer: D

59. In the code language July comes after the month of

A June

B May

C March

D September

Answer: A

60. **The month coded as Novernber**

A May

B June

C February

D October

Answer: A

61. **If the first day of a month is a Saturday, then the date of the Monday that comes after the second Sunday of the month is**

A 8

B 9

C 10

D 16

Answer: C

62. **The angle between the two hands of a dock when the time shows is 12 minutes past 5 o' clock**

A 78°

B 80°

C 84°

D 86°

Answer: C

63. **The time between 7pm and 8 pm at which the angle between the hands of the clock be** 180° **is**

A $7 \text{ hrs } 21\frac{5}{11} \text{ minutes}$

B $7 \text{ hrs } 41\frac{6}{11} \text{ minutes}$

C $7 \text{ hrs } 31\frac{5}{12} \text{ minutes}$

D $7 \text{ hrs } 5\frac{5}{11} \text{ minutes}$

Answer: D

64. **Pointing to a woman, a man said "the son of her only brother is the brother of my wife", then the woman related to the man is**

A Mother

B Sister

C Mother-in-law

D Sister of father-in-law

Answer: D

65. **A train starts at scheduled time from Visakhapatnam and is scheduled to reach Secunderabad at 6.30 AM next day. That train arrived 13 minutes late to Rajahmundry and it is late by another 42 minutes when it came to Vijayawada. Again it arrived another 37 minutes late at Khammam. Finally, if it covers 27 minutes of the late. The time of arrival at Secunderabad station on the next day is**

A 6.45 AM

B 7.00 AM

C 7.35 AM

D 8.05 AM

Answer: C

66. **Buses for Hyderabad leave every 45 minutes from Vijayawada. An announcement was made at Vijayawada bus station that, bus-A to Hyderabad lett 10 minutes late and the next bus-B will leave, on time, at 5.10 PM. The time at which the bus-A left Vijayawada is**

A 4.20 PM

B 4.30 PM

C 4.35 PM

D 4.25 PM

Answer: C

67. **5 persons A, B, C, D, E sit around a table facing the centre. A sits to the left of E. A and C sit on either side of D. then the person to the right of B is**

A A

B C

C D

D E

Answer: B

68. **If** $'\alpha'$ **denotes** $'-'$, $'\beta'$ **denotes** $'\times'$, $'\gamma'$, **denotes** $'+'$, $'\delta'$ **denotes** $'\div'$, **then** $7\gamma 8\alpha 6\delta 2\beta(8\alpha 4) =$

A 8

B 5

C 3

D 6

Answer: C

69. **For** $x, y \in R$, **define** $x * y = x + y + xy$ **and** $x\beta y = \frac{x+y}{x-y}$, **then** $(7\beta 5) * (13\beta 11) =$

A 18

B 72

C 90

D 112

Answer: C

70. **For integers a, b define** $a \oplus b = r$ **and** $a \odot b = s$, **where r and s are the remainders, respectively when a + b and a . b are divided by 7. Then,** $19 \oplus (25 \odot 40) =$

A 2

B 4

C 6

D 3

Answer: B

Communication Ability

Instructions [71 - 81]

Choose the correct meaning of the word given

71. **Autonomous**

A Anarchic

B Venomous

C Self-governing

D Dangerous

Answer: C

72. **Hone**

A Perfect

B Honor

C Sharpen

D Deceive

Answer: C

73. **Ingenuous**

A Ingenious

B Naive

C Inconvenient

D Ittitating

Answer: B

74. **Denigrate**

A Denoting

B Didactic

C Degrade

D Demanding

Answer: C

75. **Travesty**

A Mockery

B Derivative

C Apt

D Authentic

Answer: A

76. **Embezzlement**

A Buzzlin
g

B Auctioning

C Expending

D Misappropriation

Answer: D

77. **Cajole**

A Coax

B Cox

C Cordial

D Cunning

Answer: A

78. **Trying to analyze something by way of comparison is called a/an**

A apology

B eulogy

C elegy

D analogy

Answer: D

79. **Fiasco**

A Drama

B Failure

C Fraud

D Stupidity

Answer: B

80. **His popularity was such that his election turned out to be**

A anonymous

B unanimous

C innocuous

D ridiculous

Answer: B

81. **Select the correct meaning of the idiom given**
Go the whole hog

A Eat a lot

B Behave very badly

C Enjoy one's self a lot

D Do something completely

Answer: D

82. **Fill in the blank by choosing the correct word given**
After their dispute the two partners launched _____ attacks against each other.

A vituperative

B laudatory

C sycophantic

D ingratiating

Answer: A

83. **Choose the correct meaning of the word given**
Depose

A Overthrow

B Deposit

C Upgrade

D Deprive

Answer: A

Instructions [84 - 85]

Fill in the blank by choosing the correct word given

84. **Lalith was given to ___ that the job was his.**

A understand

B apprehend

C think

D imagine

Answer: A

85. **The young man was _____ being the only male in the play.**

A discredited

B discomfited

C adulterated

D abdicated

Answer: B

Instructions [86 - 87]

Choose the appropriate answer

86. **Any external device attached to a computer to enhance its operation is called a/an**

A peripheral

B platform

C output

D input

Answer: A

87. **Which of the following is not an operating system?**

A MS-WORD

B LINUX

C IOS

D ANDROID

Answer: A

Instructions [88 - 89]

Fill in the blank by choosing an appropriate answer

88. **The liability of shareholders of a company is limited to the _____**

A paid up value of shares

B nominal value of shares

C extent of their private assets

D accounts called up

Answer: A

89. **A device that can convert digital signal to analog signal is called _____**

A a packet

B modem

C switch

D cursor

Answer: B

Instructions [90 - 92]

Choose the appropriate answer

90. **Which one of the following is not a browser?**

A Google Drone

B Google Chrome

C Mozilla Firefox

D Microsoft Edge

Answer: A

91. **What is the expansion of the acronym NASDAQ?**

A Net Asset Securities Drawn Against Quotations

B National Association of Securities Dealers Auto1nated Quotations

C New Association of Securities Dealers and Quality

D National Account of Security Deposit Asset Quality

Answer: B

92. **Stylus is a/an**

A computer language

B computer code

C output device

D input device

Answer: D

93. **Fill in the blank by choosing an appropriate answer**
A storage medium that retains its contents even in the absence of power is referred as .....

A volatile storage

B non-volatile storage

C RAM

D Cache memory

Answer: B

Instructions [94 - 95]

Choose the appropriate answer

94. **A piece of data from a website, stored within a web browser to be used at a later time is called**

A cookies

B alerts

C messages

D mails

Answer: A

95. **The process of identifying and removing errors from Computer Hardware is called**

A debunking

B debugging

C detracting

D browsing

Answer: B

Instructions [96 - 97]

Fill in the blank by choosing an appropriate answer

96. **A reward beyond basic pay is called a/an _____ benefit.**

A fridge

B fringe

C avoidable benefit

D undesirable

Answer: B

97. **_____is not an econontic activity.**

A A student playing cricket

B A lawyer practicing law

C A practicing doctor

D A professional clicketer playing cricket

Answer: A

Instructions [98 - 100]

Choose the appropriate answer

98. **A mouse is connected to**

A the serial port

B LPT1 port

C LPT2 port

D the key board

Answer: A

99. **Which of the following is an extractive industry?**

A Forest cultivation

B Cattle breeding

C Hunting

D Flour mills

Answer: D

100. **"Cache" means**

A Cash-data storage area in a computer

B A small data-memory storage area in a computer

C Hard drive

D Website

Answer: B

Instructions [101 - 105]

Fill in the blank by choosing the correct answer

01. **It is necessary to_____ that standards are maintained.**

A insure

B influence

C ensure

D scold

Answer: C

02. **The budget is likely to be presented on February 26, two days ahead of the_____date.**

A critical

B conventional

C suitable

D convenient

Answer: B

03. **_____ pollution control measures are expensive, many industries hesitate to adopt them.**

A Although

B However

C As

D Despite

Answer: C

04. **'One who neither does the work nor allows others to do it' is often described as a dog_____ the manger.**

A by

B of

C with

D in

Answer: D

05. **When I entered the room, the actor smiled _____ me as if she knew me.**

A at

B to

C on

D by

Answer: A

06. **Choose the correct auswer**
Choose the option that is passive form of the given sentence. The tennis ball hit Neeraj on the head.

A Neeraj was being hit on the head by the tennis ball.

B Neeraj was hit on the head by the tennis ball.

C The tennis ball was being hit by Neeraj.

D Neeraj had been hit on the head by the tennis ball.

Answer: B

Instructions [107 - 108]

Fill in the blank by choosing the correct answer

07. **By now, they must have been fairly reconciled _____ their lot.**

A by

B on

C to

D upon

Answer: C

08. **In order to share the work, we agreed to carry the snacks for the picnic _____ my friend offered to bring the food items.**

A although

B and

C however

D in spite

Answer: A

09. **Choose the correct answer**
Choose the option that is passive form of the given sentence.
Someone broke the window pane.

A Someone broken the window pane.

B The window pane had been broke by someone.

C The window pane is broken by someone.

D The window pane was broken by someone.

Answer: D

Instructions [110 - 112]

Fill in the blank by choosing the correct answer.

10. **Last Sunday we saw a five_____elephant in the zoo.**

A years

B year old

C year

D years old

Answer: B

11. **The corrupt official, together with his subordinates _____ arrested.**

A were

B was

C have

D have been

Answer: B

12. **Although both Ravi and Latha have the same qualifications, Ravi commands _____ salary.**

A the highest

B high

C more high

D a higher

Answer: D

13. **Choose the correct answer**

A : The issue has been debated with more heat than light.

B : Obsession clouds vision.

B means that deep involvement may sometimes_____our vision.

A improve

B blur

C broaden

D promote

Answer: B

Instructions [114 - 115]

Fill in the blank by choosing the correct answer.

14. **The boy takes _____his mother.**

A after

B before

C besides

D beside

Answer: A

15. **The days go_____ so quickly.**

A by

B bye

C for

D to

Answer: A

16. **Choose the correct answer**

The cricket match proved to be <u>a big draw.</u>

The underlined phrase means

A a keen contest

B a huge attraction

C a game of boredom

D a lovely spectacle

Answer: B

Instructions [117 - 120]

Fill in the blank by choosing the correct answer.

17. **The sun _____ at six this morning.**

A raised

B rose

C arose

D aroused

Answer: B

18. **The hosts were happy with our visit _____ their borne.**

A on

B in

C of

D to

Answer: D

19. **Having been stung by the scorpion, he _____ to his feet.**

A spring

B springs

C sprang

D have sprung

Answer: C

20. **She was _____ aware of what was happening outside.**

A hardly

B hard

C hardened

D can

Answer: A

Instructions [121 - 125]

Read the passage below and choose the correct answer for the questions.

Comprehension:

The Indian Space Research Organization (ISRO) is the space agency of the Government of India headquartered in the city of Bangalore. Its vision is to "harness space technology for national development while pursuing space science research and planetary exploration". Formed in 1969, ISRO superseded the erstwhile Indian National Committee for Space Research (INCOSPAR) established in 1962 by the efforts of independent India's first Prime Minister. Jawaharlal Nehru, and his close aide and scientist Vikram Sarabhai. The establishment of ISRO thus institutionalized space activities in India. It is managed by the Department of Space, which reports to the Prime Minister of India.

ISRO built India's first satellite, Aryabhatta, which was launched by the Soviet Union on 19th April, 1975. It was named after Mathematician Aryabhatta. In 1980, Rohini became the first satellite to be placed in orbit by an Indian-made launch vehicle, SLV-3. ISRO subsequently developed two other rockets: the Polar Satellite Launch Vehicle (PSL V) for launching satellites into polar orbits and the Geosynchronous Satellite Launch Vehicle (GSLV) for placing satellites into geostationary orbits. These rockets have launched numerous communication satellites and each obse1vation satellites. Satellite navigation systems like GAGAN and IRNSS have been deployed. In January 2014. ISRO successfully used an indigenous cryogenic engine in a GSLVD5 launch of the GSAT-14.

ISRO sent a lunar orbiter, Chandrayaan-1. on 22nd October, 2008 and Mars orbiter, Mars Orbiter Mission, on 5th November, 2013, which successfully entered Mars orbit on 24th September, 2014, while making India the first nation to succeed on its first attempt to Mars, and ISRO the fourth space agency in the world as well as the first space agency in Asia to successfully reach Mars orbit. On 18th June, 2016, ISRO successfully set a record with a launch of 20 satellites in a single payload, one being a satellite from Google. On 15th February, 2017, ISRO launched 104 satellites in a single rocket (PSLV-C37) and created a world record. ISRO launched its heaviest rocket, Geosynchronous Satellite Launch Vehicle-Mark III (GSLV- Mk III), on 5th June, 2017 and placed a communications satellite GSAT-19 in orbit. With this launch, ISRO became capable of launching 4 ton heavy satellites.

21. **What is the meaning in the word. "harness" found in the first paragraph of the passage?**

A bind and yoke together

B experiment

C authorize

D distribute

Answer: A

22. **In which year ISRO was established superseding Indian National Committee for Space Research (INCOSP AR)?**

A 1962

B 1977

C 1968

D 1969

Answer: D

23. **ISRO built its first satellite, Aryabhatta, and it was launched on 19th April, 1975 from the land of**

A USA

B (Former) Soviet Union

C France

D India

Answer: B

24. **ISRO developed PSLVs and GSL Vs for launching satellites of the categories of**

A Defence

B Communication

C Earth observation

D Both communication and Earth observation

Answer: D

25. **ISRO launched 104 satellites in a single rocket (PSLV-C37) and it is regarded as**

A an Asia record

B a SAARC

record

C a World record

D a G-7 record

Answer: C

Instructions [126 - 130]

Read the passage below and choose the correct answer for the questions.

Comprehension:

The world's worst recorded food disaster occurred in 1943 in British-ruled India. Known as the Bengal Famine, an estimated 4 million people died of hunger that year in eastern India (which included today's Bangladesh). Initially, this catastrophe was attributed to an acute shortfall in food production in the area. However, Indian economist Amartya Sen has established that while food shortage was a contributor to the problem, a more potent factor was the result of hysteria related to World War II which made food supply a low priority for the British rulers.

When the British left India in 1947. India continued to be haunted by memories of the Bengal Famine. It was therefore natural that food security was one of the main items on free India's agenda. This awareness led, on the one hand, to the Green Revolution in India and, on the other, legislative measures to ensure that businessmen would never again be able to hoard food for reasons of profit.

The Green Revolution, spreading over the period from 1967-68 to 1977-78. changed India's status from a food-deficient country to one of the world's leading agricultural nations. Until 1967 the government largely concentrated on expanding the farming areas. But the population was growing at a much faster rate than food production. This called for an immediate and drastic action to increase yield. The action came in the form of the Green Revolution. The term 'Green Revolution' is a general one that is applied to successful agricultural experiments in many developing countries.

India is one of the countries where it was most successful.

26. **India was able to overcome its food deficiency problem in _____**

A a period of ten years

B a period of two years

C the year 1967

D the year 1947

Answer: A

27. **Which of the following most appropriately completes the statement:**
Amartya Sen feels that the famine occurred due to _____
A. Acute shortfall in food production
B. World War II hysteria
C. Low priority given to food supply

D. Lack of legislative measures against hoarding

A A & D

B A & C

C B & C

D C & D

Answer: B

28. **A word used in the passage which means the same as '-an event which causes great damage and suffering' is _____**

A haunted

B catastrophe

C hysteria

D potent

Answer: B

29. **This passage is mainly about _____**

A the worst food disaster in the world

B the cause of four million deaths in Bangladesh

C India's successful implementation of Green Revolution

D Amartya Sen's analysis of the food shortage problem

Answer: A

30. **Which of the following statement is NOT endorsed by the passage?**

A The famine in Bengal happened solely due to low food production

B Both India and Bangladesh were affected by the famine.

C The British did not take adequate steps to address the problem.

D After independence, India needed to look into the food security issue on a priority basis.

Answer: A

Instructions [131 - 135]

Read the passage below and choose the correct answer for the questions.

Comprehension:

"I Have a Dream" is a public speech delivered by American civil rights activists Martin Luther King Jr. during the March on Washington for Jobs and Freedom on August 28, 1963, in which he calls for an end to racism in the United States and called for civil and economic rights. Delivered to over 2,50,000 civil rights supporters from the steps of the Lincoln Memorial in Washington, D.C ., the speech was a defining moment

of the civil rights movement.

Beginning with a reference to the Emancipation Proclamation, which freed millions of slaves in 1863, King observes that: "one hundred years later, the Negro still is not free. Towards the end of the speech. King departed from his prepared text for a partly improvised peroration on the theme "I have a dream", prompted by Mahalia Jackson's cry: "Tell them about the dream, Martin!" In this part of the speech, which most excited the listeners and has now become its most famous, King described his dreams of freedom and equality arising from a land of slavery and hatred. Jon Meacham writes that, "With a single phrase, Martin Luther King Jr. joined Jefferson and Lincoln in the rattles of men who've shaped modem America". The speech was ranked the top American speech of the 20th century in a 1999 poll of scholars of public address.

31. **To how many supporters was "I Have a Dream" delivered by Civil Rights Activist, Martin Luther King Jr.?**

A 2,15,000

B 2,25,000

C 1,50,000

D 2,50,000

Answer: D

32. **What issue does Manin Luther King's speech address?**

A Condemning of racism only

B End to racism and plea for economic rights

C Civil rights only

D Advocating Civil War

Answer: B

33. **What drives Martin Luther King to use the phrase: "I have a dream"?**

A He reads out the Emancipation Proclamation

B He is prompted by Mahalia Jackson

C He is overwhelmed by the crowd

D Lincoln had asked him to give the speech

Answer: B

34. **What is the meaning of the phrase "partly improvised" found in the last paragraph?**

A Partly creatively modified

B Partly made important

C Partly added strength

D Partly omitted

Answer: A

35. **What is the basic reference for Martin Luther King's famed speech?**

A The Emancipation proclamation

B An improvisation

C A peroration

D "I Have a Dream"

Answer: A

Instructions [136 - 140]

Read the passage below and choose the correct answer for the questions.

Comprehension:

Carbon neutrality means having a balance between emitting carbon and absorbing carbon from the atmosphere in carbon sinks. Removing carbon dioxide from the atmosphere and then storing it is known as carbon sequestration. In order to achieve net zero emissions, all worldwide greenhouse gas (GHG) emissions will have to be counterbalanced by carbon sequestration.

Carbon sink is any system that absorbs more carbon than it emits. The main natural carbon sinks are soil, forests and oceans. According to estimates, natural sinks remove between 9.5 and 11 Gt of $CO2$ per year. Annual global $CO2$ emissions reached 38.0 Gt in 2019.

To date, no artificial carbon sinks are able to remove carbon from the atmosphere on the necessary scale to fight global warming.

The carbon stored in natural sinks such as forests is released into the atmosphere through forest fires, changes in land use or logging. This is why it is essential to reduce carbon missions in order to reach climate neutrality.

36. **Carbon sequestration involves _____**

A releasing carbon into the atmosphere

B storing greenhouse gases

C removing carbon from the atmosphere and storing it

D removing carbon from the atmosphere

Answer: C

37. **A carbon sink emits less carbon than it _____**

A releases

B produces

C absorbs

D exudes

Answer: C

38. **The world today _____ sufficient carbon sinks to fight global warming**

A has

B need not work towards creating

C does not have

D cannot financially afford

Answer: C

39. **Reducing carbon emissions is important to**

A prevent logging

B reach climate neutrality

C avoid forest fires

D grow forests

Answer: B

40. **Which of the following is not an example of carbon sink?**

A The sky

B Forest

C Ocean

D Soil

Answer: A

Mathematical Ability

41. **If** $\left(\frac{2}{3}\right)^{x} = \left(\frac{243}{32}\right)^{\frac{x}{3}+2}$, **then** $x^2 =$

A 225

B 49

C $\frac{225}{49}$

D 274

Answer: C

42. **If** $\frac{8^5.(27)^4.6^3}{(64)^2.9^5.18^3} = 2^{\alpha}.2^{\beta}$ **then the quadratic equation for which** α **and** β **are the roots is**

A $x^2 + 2x + 3 = 0$

B $x^2 - 2x - 3 = 0$

C $x^2 + 2x - 3 = 0$

D $x^2 - 2x + 3 = 0$

Answer: B

43. **The ratio of the present ages of a father and his son is 7 : 1 and the difference in their ages is 36 years. The ratio of their ages in the same order when the son reaches 20 years of age is**

A 8 : 3

B 14 : 5

C 14 : 3

D 9 : 5

Answer: B

44. **If** $5x = 4y$**, then** $3x : 2y =$

A 4 : 3

B 3 : 4

C 5 : 6

D 6 : 5

Answer: D

D

45. $12^{-\frac{1}{2}}\ 35$ _

A $8^{-\frac{1}{2}}\ 15$

B $8^{+\frac{1}{2}}\ 15$

C $7^{-\frac{1}{2}}\ 15$

$$7+\frac{1}{2}\left(10+2\frac{2}{15}\right)=21$$

Answer: A

46. **If** $x = 9 + 4 \quad 5$**, then** $x =$

A $2 + 3\sqrt{5}$

B $1 + 2\sqrt{5}$

C $3 + 2\sqrt{5}$

D $2 + \quad 5$

Answer: D

47. **The number of integers k that are divisible by 3 and satisfying the inequality** $-17 < k \leq 12$ **is**

A 9

B 10

C 11

D 12

Answer: B

48. **The number of positive divisors of 11! is**

A 11

B 180

C 360

D 540

Answer: D

49. **Three persons A, B and C take 27, 36 and 45 seconds respectively to run around a circular track. If all of them start at a point P on the track at the same time, after how much time (in minutes) all of them meet again at P.**

A 6

B 9

C 12

D 15

Answer: B

50. **The number of pairs of positive integers a and b with gcd(a ,b) = 23 and a + b = 184 is**

A 8

B 4

C 2

D 1

Answer: C

51. **The decimal representation of** $\frac{3}{22}$ **is**

A 0.136

B 0.136

C 0.136

D 0.136

Answer: C

52. **If** $1^3 + 4^6 + 7^9 + 10^{12} = n^m$ **and (m, n) = 1, then m - n =**

A 875

B 862

C 825

D 784

Answer: A

$2\ 7\ 5\ 9 \qquad a1{-}a4$

53. **If** $a1, a2, a3$ **and** $a4$ **is the decreasing order of the elements in the set** $\{7, 15, 8, 23\}$ **then** $a1+a4 =$

A $\frac{2}{7}$

B $\frac{19}{56}$

C $\frac{51}{56}$

D $\frac{19}{51}$

Answer: D

54. **The smallest fraction among the following fractions is** $\frac{2}{9}, \frac{3}{11}, \frac{4}{13}, \frac{6}{7}$

A $\frac{3}{11}$

B $\frac{2}{9}$

C $\frac{4}{13}$

D $\frac{6}{7}$

Answer: B

55. **The total number of students in a class with 88 girls and the remaining 45% boys is**

A 120

B 130

C 150

D 160

Answer: D

56. **If 30% of x is equal to 24 rnore than 15% of 120. then 25% ofx is**

A 25

B 35

C 27

D 26

Answer: B

57. **The cost price of an item is Rs.360/- and its marked price is Rs. 480/-. The discount percentage that can be given on it to earn a profit of 25% is**

A $8\frac{2}{3}$

B $7\frac{1}{4}$

C $6\frac{1}{4}$

D 5

Answer: C

58. **The cost price (in Rs.) of the item, which is sold at Rs. 189/-for a profit of** $12\frac{1}{2}$ **% is**

A 178

B 168

C 154

D 148

Answer: B

59. **In a partnership, A invests 50% of the capital for** $\frac{1}{4}$ ***th*** **of the time, B invests 20% of the capital for** $\frac{1}{2}$ **of**

the time and C invests 30% of the capital for the whole time. If the share of A in the end profit is Rs.12.5 lakhs then the total profit (in lakhs of rupees) is

A 25

B 37.5

C 50

D 52.5

Answer: D

60. **A and B started a business investing Rs. 3.5 and Rs. 6.5 lakhs respectively. After six months B withdrew from the business while C joined it at that time investing Rs. 7.5 lakhs. In the year-end profit of Rs 2.4 lakhs the share of A (in rnpees) is**

A 60,000

B 80,000

C 76,000

D 1,60,000

Answer: B

61. **Two pipes P and Q can fiH an empty tank individually in 18 minutes and 24 ntinutes respectively. Both are opened at a time and after sometime Q is closed and P is continued to fill the tank. If the tank is full in 12 minutes then the time (in ntinutes) for which the pipe Q is opened is**

A 9

B 8

C 7

D 6

Answer: B

62. **Two taps A and B can fill an empty tmllc in 12 hours and 8 hours respectively while C can empty the full tatllc in 6 hours. If all the three taps are opened simultaneously then the time (in hours) in which the empty tatllc gets filled is**

A 10

B 12

C 18

D 24

Answer: D

If a train moving at a speed of 36 meters per second passes a person riding on a bicycle in the opposite direction at 4 meters per second in 10 seconds, then the length of that train (in meters) is

A 320

B 360

C 400

D 144

Answer: C

63. **A person travels from P to Q by a car at a speed of 75 kmph and returns from Q to P reducing the speed by 25 krnph. If the total time taken for the entire journey is 3 hours then the distance between P and Q (in km) is**

A 100

B 90

C 75

D 80

Answer: B

64. **Two persons X and Y can together complete a piece of work in 8 days: Y and Z together complete the same work in 12 days. If X,Y and Z together work and can complete the same work in 6 days, then the number of days needed for Y alone to complete the work is**

A 36

B 30

C 24

D 18

Answer: C

65. **P, Q and R can complete a piece of work independently in 15 hours, 12 hours and 10 hours respectively. P and Q stmted the work and after 4 hours R joined them to complete the work. The**

time (in minutes) R worked is

A 60

B 75

C 90

D 96

Answer: D

66. **The area (in sq. cm) of a regular hexagon with each side of 6 cm is**

A $9\sqrt{3}$

B $18\sqrt{3}$

C $36\sqrt{3}$

D $54\sqrt{3}$

Answer: D

67. **The area of a rectangular metal sheet is 60 sq.m. The smn of its length and a diagonal is equal to 5 times its breadth. The circumference of the metallic sheet (in meters) is**

A 65

B 55

C 44

D 34

Answer: D

68. **The number of bricks with dimensions 20 cm x 10 cm x 7.5 cm required to build a wall of dimension 24 m x 4 m x 0.25 m is**

A 24000

B 20000

C 16000

D 12000

Answer: C

69. **An oil storage tank is in the shape of a cone of radius 6 meters and height 9 meters sunnounted on a cylinder of height 3 meters. The volume (in cubic meters) of the oil that can be stored in the tattle is**

A $216\ \pi$

B $162\ \pi$

C $108\ \pi$

D $54\ \pi$

Answer: A

70. **For a solid circular cylinder let c and t respectively denote its cutved surface area and total surface area. If c : t = 1 : 2 and t = 616 square units then the volume (in cubic units) of the cylinder is(take** $\pi = \frac{22}{7}$ **)**

A 539

B 1078

C 1617

D 2156

Answer: B

71. **The number of revolutions made by a wheel of diameter 2.8 meters to cover a distance of 660 meters is**

A 50

B 75

C 90

D 100

Answer: B

72. **If a metallic solid cylinder of radius 6 inches and height 64 inches is melted and cast in the fonn a sold sphere. then the surface area of that sphere (in sq. inches) is**

A $546\ \pi$

B $576\ \pi$

C $584\ \pi$

D $625\ \pi$

Answer: B

73. **If m divides $a - b$, then we write $a \equiv b$ (mod m).Then the correct statement among the following is**

A $2^{15} = 4(\text{mod } 7)$

B $2^{17} = 3(\text{mod } 7)$

C $2^{20} = 2(\text{mod } 7)$

D $2^{24} = 1(\text{mod } 7)$

Answer: D

74. **The digit in units place of 7^{25} is**

A 6

B 7

C 3

D 5

Answer: B

75. **The contradiction, among the following when p, q are two statements is**

A $(\sim q) \wedge p$

B $p \wedge q \wedge ((\sim p) \vee (\sim q))$

C $(p \vee q) \vee (\sim p)$

D $p \Rightarrow q$

Answer: B

76. **Let N and Z denote the set of all natural numbers and the set of all integers respectively. The function $f : N \to Z$ defined by $f(n) = 2^n$ or $-(2^{n-1})$, according as n is even or odd, is**

A injection only

B srujection only

C bijection only

D neither an injection nor a surjection

Answer: C

77. **The equation of the line wi1ich is perpendicular to the line L, and passing through the point (1, 1) where L is the line making intercepts** $\frac{1}{4}$ **and** $\frac{1}{5}$ **respectively on the x - axis and y- axis, is**

A $4x + 5y = 1$

B $4x - 5y = 1$

C $5x - 4y = 1$

D $5x + 4y = 1$

Answer: C

78. $\frac{\cos\theta}{\sec\theta - 1} + \frac{\cos\theta}{\sec\theta + 1} =$

A $2\cot\theta\, 2$

B $\tan\ \theta\ 2$

C $\cot^2\theta$

D $2\tan^{-2}\theta$

Answer: C

79. **The ordered pair** (α, β) **such that the polynomial** $x^4 + \alpha x^3 + \beta x^2 - 12x + 16$ **bas the quadratic expression** $x^2 + x - 2$ **as a factor is**

A (3, 8)

B (-3, 8)

C (3, -8)

D (-3, -8)

Answer: C

80. **The angles of elevation of the top of a tower and the top of a flagstaff on it are observed to be** 30° **and** 60° **respectively from a point P on the level ground 200 meters away from the foot of the tower. Then the length of the flagstaff (in meters) is**

A $200\sqrt{3}$

B $\frac{200}{\sqrt{3}}$

C $400\sqrt{3}$

D $\frac{400}{\sqrt{3}}$

Answer: D

81. **If** $a1 < a2 < a3 < ..... < a9$ **are nine arithmetic means between 5 and 65 then** $a7 =$

A 35

B 47

C 53

D 59

Answer: B

82. $(\sqrt{3} - 1)^6 + (\sqrt{3} + 1)^6 =$

A 416

B 424

C 432

D 440

Answer: A

83. $\lim x \to 0 \frac{1-\cos \alpha}{x^2} =$

A 0

B 2

C ∞

D $\frac{1}{2}$

Answer: D

84. **Given that A (2, 2), B (6, 1) and C (7, 3) are the vertices of a triangle, the length of the median through A is**

A 5

B $\frac{1}{42}$

C 4

D $\frac{1}{32}$

Answer: B

85. **The arithmetic mean of the distribution given below is**

x	1	2	3	4	5	6	7
f	2	5	8	15	17	12	11

A $\frac{22}{7}$

B 7

C $\frac{33}{7}$

D 6

Answer: C

86. **The arithmetic mean of the squares of the first n natural numbers is**

A $\frac{n+1}{2}$

B $\frac{n.(n+1)^2}{4}$

C $\frac{(n+1)(2n+1)}{6}$

$n(n+2)$

D 2

Answer: C

87. **For $n \geq 1$, let $xn = r$ where r is the remainder when n is divided by 7 (for instance, $x24 = 3$ since 24 leaves remainder 3 when divided by 7). The mode of the observations $x5, x9, x11, x13, x16, x21, x23, x25$ is**

A 0

B 1

C 2

D 4

Answer: C

88. **If the mean and the mode of a data are 15 and 21 respectively then the median of the data is**

A 17

B 18

C 19

D 23

Answer: A

89. **If $x1, x2, \ldots\ldots\ldots\ldots\ldots\ldots 10$ are marks obtained by a students such that $\sum_{i=1}^{10} xi = 90$ and $\sum_{i=1}^{10} x^2 = 900$,**

i

then the variance of this data is

A 3

B 9

C 27

D 81

Answer: B

90. **The standard deviation of the scores**
204, 208, 212, 216, 220, 224, 228 is

A $\sqrt{216}$

B 216

C 16

D 8

Answer: D

91. **The inequality satisfied by the correlation coefficient r is**

A $|r| > 1$

B $|r| < 1$

C $|r| \leq$ **D** $|r| > 2$

Answer: C

92. **If two unbiased 6 faced dice are thrown simultaneously then the probability they show up distinct numbers is**

A $\frac{1}{6}$

B $\frac{5}{6}$

C $\frac{13}{36}$

D $\frac{25}{36}$

Answer: B

93. **A bag contains 4 green, 6 red and 7 white balls. If a ball is drawn at random from this bag then the probability that it is either green or red is**

A $\frac{4}{17}$

B $\frac{6}{17}$

C $\frac{7}{17}$

D $\frac{10}{17}$

Answer: D

94. **A person gets Rs. 100 if a head turns up and loses Rs. 50 if a tail turns up when an unbiased coin is tossed. If three unbiased coins are tossed simultaneously then the probability that the person neither gains nor loses is**

A $\frac{1}{2}$

B $\frac{3}{8}$

C $\frac{5}{8}$

D $\frac{1}{5}$

Answer: B