

DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO**SERIES : I****QUESTION BOOKLET****Subjects : General English, General Studies & Aptitude and Mathematics****Full Marks : 300****Time Allowed : 2½ Hours***Read the following instructions carefully before you begin to answer the questions.***INSTRUCTIONS TO CANDIDATES**

1. This Booklet contains **150 questions** to be answered in a separate OMR Answer Sheet using Black Ballpoint Pen in the following three Parts :

Part—A	: General English	: 50 questions
Part—B	: General Studies and Aptitude	: 50 questions
Part—C	: Mathematics	: 50 questions

2. All questions are compulsory.
3. You will be supplied the Answer Sheet separately by the Invigilator. You must complete the details of particulars asked for.
4. Answer must be shown by completely blackening the corresponding circle in the Answer Sheet against the relevant question number by Black Ballpoint Pen. OMR Answer Sheet without marking Series shall not be evaluated.

Example :

Suppose the following question is asked :

The Capital of Meghalaya is

- (A) Guwahati
 (B) Kohima
 (C) Shillong
 (D) Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :

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

In the above illustration, if your chosen response is alternative (C), i.e., Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ballpoint Pen only as below :

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

The example shown above is the only correct method of answering.

5. 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 one question.
6. There will NOT be any negative marking for wrong answers.
7. The Answer Sheet must be handed over to the Invigilator before you leave the Examination Hall.
8. No Rough Work is to be done on the Answer Sheet. Space for Rough Work has been provided in the Question Booklet.

SEAL

PART—A : GENERAL ENGLISH

(Marks : 100)

Each question carries 2 marks :

Directions (Q. Nos. 1-10) : In the following questions, sentences are given with blanks to be filled in with the appropriate and suitable words. Four alternatives are suggested for each question. Choose the correct alternative out of the four.

1. If the library had been destroyed, we _____ go home.
(A) should
(B) would have to
(C) would have had to
(D) would
2. The idea _____ promising.
(A) must sound
(B) sounds
(C) has sounded
(D) will sound
3. It is high time she _____ into her own flaws.
(A) starts to look
(B) started to look
(C) starts looking
(D) started looking
4. Please remind me _____ these letters.
(A) in posting
(B) of posting
(C) for posting
(D) to post
5. I _____ ten letters since breakfast.
(A) wrote
(B) have been writing
(C) am writing
(D) have written
6. The police _____ trying to solve the mystery.
(A) has been
(B) are
(C) is
(D) were
7. I was delighted to see _____.
(A) his full recovery
(B) he fully recovered
(C) he fully recover
(D) him fully recover
8. All I wish to tell you is that you _____ revise the essay.
(A) better
(B) had better
(C) should better
(D) could better
9. The buffet _____ prepared by the kitchen staff.
(A) was
(B) had been
(C) was being
(D) is
10. The soup _____ of cabbage, so I expected it to taste disgusting.
(A) is smelling
(B) was smelling
(C) smells
(D) smelt

Directions (Q. Nos. 11-20) : In these questions, out of the four alternatives given, choose the one which best expresses the meaning of the underlined word.

11. Don't entertain any misgivings about his conduct.
(A) distrust (B) doubt
(C) suspicion (D) impression
12. One must not be callous to old people.
(A) mean (B) hard-hearted
(C) cruel (D) aggressive
13. Businessmen who lack acumen usually remain unsuccessful.
(A) smartness (B) sharpness
(C) cleverness (D) keenness
14. Young men soon get fed up of their sedentary jobs.
(A) monotonous
(B) mechanical
(C) involving sitting
(D) nomadic
15. The information on my website was superannuated and needed updating.
(A) discharged (B) impaired
(C) obsolete (D) inaccurate
16. The debonair man knew he could win the woman over with a smile.
(A) intelligent (B) good looking
(C) urbane (D) cunning
17. Boiling an egg requires only a modicum of intelligence.
(A) dash (B) tint
(C) dole (D) gram
18. The quiet librarian shocked everyone by wearing a garish red dress to work.
(A) beautifully decorated
(B) unpleasantly gaudy
(C) stylish
(D) sophisticated

19. My father was an itinerant worker.
(A) diligent (B) assiduous
(C) tireless (D) frequent traveller
20. His fortunes reached their nadir.
(A) abyss (B) summit
(C) acme (D) zenith

Directions (Q. Nos. 21-25) : In these questions, out of the four alternatives given, choose the one which is opposite in meaning to the underlined word.

21. Only a philistine would destroy such a priceless portrait!
(A) couth (B) gross
(C) boor (D) lout
22. William, fairly despondent, heads for the door.
(A) morose (B) forlorn
(C) glum (D) buoyant
23. Jane likes to desecrate anything considered to be holy.
(A) mar (B) encroach
(C) soil (D) hallow
24. Everything was planned in fastidious detail.
(A) spirited (B) misguided
(C) exacting (D) squeamish
25. Ironically the meeting with Jack was fortuitous.
(A) disastrous
(B) propitious
(C) serendipitous
(D) adventitious

Directions (Q. Nos. 26–35) : Fill in the blanks with the appropriate prepositions from the options given.

26. He is liable _____ his wife's death.
(A) in (B) by
(C) over (D) for
27. Nothing will come _____ nothing.
(A) in (B) to
(C) of (D) against
28. Carry on _____ your work.
(A) in (B) with
(C) at (D) beside
29. She is slow _____ speech.
(A) at (B) in
(C) of (D) on
30. He came _____ to my ways of thinking after a while.
(A) to (B) over
(C) down (D) on
31. Be zealous _____ a good cause.
(A) in (B) for
(C) with (D) over
32. The children were entrusted _____ the care of their uncle.
(A) to (B) in
(C) of (D) upon
33. The ball rolled _____ the table.
(A) over (B) off
(C) on (D) around

34. I walked _____ the riverbank.
(A) beside (B) around
(C) along (D) from

35. The new chapter begins _____ page 20.
(A) from (B) in
(C) at (D) with

Directions (Q. Nos. 36–45) : In these questions, four alternatives are given for the given idiom/phrase. Choose the alternative which best expresses the meaning of the given idiom/phrase.

36. To have had one's chips means
(A) to reach the moment of truth
(B) to be close to success
(C) to be close to defeat
(D) None of the above
37. Halcyon days means
(A) times of warfare
(B) mythical times
(C) times of peace and tranquility
(D) None of the above
38. Hatchet job means
(A) an attempt to kill a prominent person
(B) a well-planned robbery
(C) a one minute job
(D) None of the above
39. A rule of thumb means
(A) guesswork
(B) careful calculation
(C) a sign of official recognition
(D) None of the above

40. To get someone's goat means
 (A) to steal from someone
 (B) to annoy someone
 (C) to imitate someone
 (D) None of the above
41. To bite the dust means
 (A) to get into trouble
 (B) to be finished
 (C) to be reduced to nothing
 (D) None of the above
42. On the breadline means
 (A) having only bread to eat
 (B) having enough to eat
 (C) having almost nothing to eat
 (D) None of the above
43. A couch potato means
 (A) a person who loves potatoes
 (B) a lazy person
 (C) an inactive TV addict
 (D) None of the above
44. Dog in a manager means
 (A) unwilling to let others benefit from things one cannot use oneself
 (B) a domesticated animal
 (C) a faithful person
 (D) None of the above
45. A lame duck means
 (A) an unhealthy person
 (B) an ineffectual person
 (C) a delicate person
 (D) None of the above

Directions (Q. Nos. 46-50) : In these questions, some of the sentences have errors and some have none. Find out which part of a sentence (A), (B) or (C) has an error and select that part as an answer. If there is no error, then (D) is the answer.

46. (A) Jane had
 (B) washed her hair
 (C) but she hasn't dried it yet
 (D) No error
47. (A) I don't know
 (B) what you do in these jeans,
 (C) but they're filthy
 (D) No error
48. (A) My elder sister
 (B) attended this school
 (C) for six years
 (D) No error
49. (A) Sue said that
 (B) she saw
 (C) Mike at the cinema
 (D) No error
50. (A) The bell use
 (B) to ring at twelve
 (C) o'clock every day
 (D) No error

PART—B : GENERAL STUDIES AND APTITUDE

(Marks : 100)

Each question carries 2 marks :

51. Which one of the following movements was launched in India in 1905 to oppose the Partition of Bengal?

- (A) Home Rule Movement
- (B) Non-Cooperation Movement
- (C) Swadeshi Movement
- (D) Civil Disobedience Movement

52. The Quit India Movement was launched in

- (A) June 1942
- (B) July 1942
- (C) August 1942
- (D) September 1942

53. The Lahore Session of the Indian National Congress (1929) is very important in history because—

- 1. the rift between the extremists and moderates was resolved in that session
- 2. the Congress passed the resolution demanding complete independence
- 3. a resolution was passed rejecting the Two-Nation Theory in that session

Which of the statement(s) given above is/are correct?

- (A) 1 only
- (B) 2 only
- (C) 1 and 2
- (D) 2 and 3

54. Which of the following pairs is/are correctly matched?

- 1. Mohiniyattam : Kerala
- 2. Garba : Karnataka
- 3. Yakshagana : Odisha

Codes :

- (A) 1 only
- (B) 2 and 3 only
- (C) 1, 2 and 3
- (D) None of the above

55. Which of the following characterize(s) the people of the Indus Civilization?

- 1. They worshiped both male and female deities.
- 2. They employed horse-drawn chariots in warfare.
- 3. They possessed great palaces and temples.

Codes :

- (A) 1 only
- (B) 2 only
- (C) 1, 2 and 3
- (D) None of the above

56. The earliest description of magical charms and spell could be found in

- (A) *Rigveda*
- (B) *Yajurveda*
- (C) *Atharvaveda*
- (D) *Samaveda*

57. Wood's Despatch of 1854, which is called Magna Carta of education in India, aimed at the

- (A) introduction of scientific research and rationalism in the traditional Indian education
- (B) spread of Western culture in India
- (C) creation of job opportunities for native Indians
- (D) promotion of literacy among women

58. What is the correct sequence of occurrence of the following cities in South-East Asia as one proceeds from South to North?

- 1. Bangkok
- 2. Hanoi
- 3. Jakarta
- 4. Singapore

Codes :

- (A) 4-2-1-3 (B) 3-2-4-1
- (C) 3-4-1-2 (D) 4-3-2-1

59. Swat Valley is located in

- (A) North-West Pakistan
- (B) North-East Pakistan
- (C) North-West India
- (D) North-West Afghanistan

60. "Climate is extreme, rainfall is scanty and the people used to be nomadic herders."

The above statement best describes which of the following regions?

- (A) African Savannah
- (B) Central Asian Steppe
- (C) North American Prairie
- (D) Siberian Tundra

61. Consider the following specific stages of demographic transition associated with the economic development :

- 1. Low birthrate with low death rate
- 2. High birthrate with high death rate
- 3. High birthrate with low death rate

Select the correct order of the above stages using the codes given below.

- (A) 1-2-3
- (B) 2-1-3
- (C) 2-3-1
- (D) 3-2-1

62. Consider the following :

- 1. Rice fields
- 2. Coal mining
- 3. Domestic animals
- 4. Wetlands

Which of the above are sources of methane, a major greenhouse gas?

- (A) 1 and 4
- (B) 2 and 3 only
- (C) 1, 2 and 3
- (D) All of the above

63. Consider the following regions :

- 1. Eastern Himalayas
- 2. Eastern Mediterranean region
- 3. North-Western Australia

Which of the above is/are biodiversity hotspot(s)?

- (A) 1 only
- (B) 1 and 2
- (C) 2 and 3
- (D) All of the above

64. Bundala Biosphere Reserve is located in
- Russia
 - India
 - Sri Lanka
 - Bangladesh
65. The power of the Supreme Court of India to decide disputes between the Centre and the States falls under its
- writ jurisdiction
 - advisory jurisdiction
 - original jurisdiction
 - appellate jurisdiction
66. Consider the following statements regarding a No-Confidence Motion in India :
- There is no mention of a No-Confidence Motion in the Constitution of India.
 - A motion of No-Confidence can be introduced in the Lok Sabha only.
- Which of the statement(s) given above is/are correct?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
67. The authorization for the withdrawal of funds from the Consolidated Fund of India must come from
- the President of India
 - the Parliament of India
 - the Prime Minister of India
 - the Union Finance Minister
68. The 104th Constitution Amendment Bill is related to
- abolition of Legislative Councils in certain States
 - introduction of dual citizenship for person of Indian origin living outside India
 - providing quota to socially and educationally backward classes in private educational institutions
 - providing quota for religious minorities in the services under Central Government
69. If the rate of interest is decreased in an economy, it will
- decrease the consumption expenditure in the economy
 - increase the tax collection of the government
 - increase investment expenditure in the economy
 - increase total savings in the economy
70. In the context of Indian economy, 'Open Market Operations' refer to
- borrowing by the scheduled banks from the RBI
 - lending by the commercial banks to industry
 - purchase and sale of government securities by the RBI
 - lending rate fixed by the RBI

71. If the supply of money remains the same, an increase in demand for money will lead to

- (A) a fall in the price level
- (B) an increase in the rate of interest
- (C) a decrease in the rate of interest
- (D) an increase in the level of income and employment

72. Which of the following would include Foreign Direct Investment in India?

1. Subsidiaries of companies in India
2. Majority foreign equity holding in Indian companies
3. Companies exclusively financed by foreign companies
4. Portfolio investment

Codes :

- (A) 1, 2, 3 and 4
- (B) 2 and 4 only
- (C) 1 and 3 only
- (D) 1, 2 and 3 only

73. Which of the following is/are the example/examples of chemical change?

1. Crystallization of sodium chloride
2. Melting of ice
3. Souring of milk

Codes :

- (A) 1 and 2
- (B) 3
- (C) 1 only
- (D) All of the above

74. Which one of the following is produced during the formation of photochemical smog?

- (A) Hydrocarbon
- (B) Nitrogen oxide
- (C) Ozone
- (D) Methane

75. Bisphenol A (BPA) is a

- (A) medical test for detecting cancer
- (B) test for testing the use of drugs to improve performance by athletes
- (C) chemical used for the development of food-packaging materials
- (D) special type of alloy steel

76. Electrically charged particles from space travelling at speeds of several hundred km/sec can severely harm living beings if they reach the surface of the Earth. What prevents them from reaching the surface of the Earth?

- (A) The Earth's magnetic field diverts them towards its poles
- (B) Ozone layer around the Earth reflects them back to outer space
- (C) Moisture in upper layers of atmosphere prevents them from reaching the surface of the Earth
- (D) All of the above

77. A 'black hole' is a body in space which does not allow any radiation to come out. This property is due to its

- (A) very small size
- (B) very large size
- (C) very high density
- (D) very low density

78. A present group of nations known as G-8 started first as G-7. Which of the following was not one of them?

- (A) Canada
- (B) Italy
- (C) Japan
- (D) Russia

79. Erythrocytes are also known as

- (A) red blood cells (RBCs)
- (B) white blood cells (WBCs)
- (C) platelets
- (D) tissue fluids

80. Which of the following animals does not undergo metamorphosis?

- (A) Moth
- (B) Tunicate
- (C) Earthworm
- (D) Starfish

Directions (Q. Nos. 81-83) : Which one of the given responses would be a meaningful order of the following words?

81. 1. Sending
2. Encoding
3. Receiving
4. Decoding

- (A) 2-4-3-1
- (B) 4-2-1-3
- (C) 1-2-3-4
- (D) 2-1-3-4

82. 1. Poverty
2. Population
3. Death
4. Unemployment
5. Disease

- (A) 3-4-2-5-1
- (B) 2-4-1-5-3
- (C) 2-3-4-5-1
- (D) 1-2-3-4-5

83. 1. Compose
2. Appreciation
3. Money
4. Think
5. Sing

- (A) 1-4-2-5-3
- (B) 4-1-5-2-3
- (C) 2-4-3-5-1
- (D) 5-4-2-1-3

84. If in a certain code 'INTELLIGENCE' is written as 'ETNIGILLENCE', then how can 'MATHEMATICAL' be written in the same code?

- (A) AMHTMETACILA
- (B) TAMMEHITALAC
- (C) HTAMTAMELACI
- (D) LACTTAMEHTAM

85. If the word 'TABLECLOTH' is coded as 'XEMRANRIXT', then how can 'HOTEL' be coded?

- (A) RIXAT
- (B) TIXAR
- (C) TAXIR
- (D) RAXIT

86. If B = 2, BAG = 10, then BOX = ?

- (A) 36
- (B) 39
- (C) 41
- (D) 52

87. If the word 'PRINCIPAL' is written as 'LAPICNIRP', then how can 'ADOLESCENCE' be written in the same code?

- (A) ECNCESELODA
- (B) ECNECSLEODA
- (C) ECNSCEELODA
- (D) ECNECSELODA

88. A, B, C, D, E and F are sitting in a row. E and F are in the centre and A and B are at the ends. C is sitting on the left of A. Then, who is sitting on the right of B?

- (A) A
- (B) D
- (C) E
- (D) F

Directions (Q. Nos. 89 and 90) : In each of the following questions, one number is wrong in the series. Find out the wrong number.

89. 56, 58, 62, 70, 84, 118, 182

- (A) 58
- (B) 62
- (C) 84
- (D) 118

90. 2, 3, 12, 37, 86, 166, 288

- (A) 2
- (B) 3
- (C) 166
- (D) 86

91. The profit earned after selling an article for ₹ 878 is the same as loss incurred after selling the article for ₹ 636. What is the cost price of the article?

- (A) ₹ 797
- (B) ₹ 787
- (C) ₹ 767
- (D) ₹ 757

92. What is 25% of 35% of $\frac{3}{7}$ th of 1680?

- (A) 21
- (B) 3969
- (C) 189
- (D) 63

93. A sum of money is divided among A, B, C and D in the ratio 3:5:8:9 respectively. If the share of D is ₹ 1,872 more than the share of A, then what is the total amount of money of B and C together?
- (A) ₹ 4,156
(B) ₹ 4,165
(C) ₹ 4,056
(D) ₹ 4,065
94. The ages of Nitish and Suresh are in the ratio 5:6 respectively. After 8 years, the ratio of their ages will be 7:8. What is the difference in their ages?
- (A) 4 years
(B) 8 years
(C) 10 years
(D) 12 years
95. 56 men can complete a piece of work in 24 days. In how many days can 42 men complete the same piece of work?
- (A) 18
(B) 32
(C) 98
(D) 48
96. A 200 m long train crosses a platform of double its length in 36 seconds. What is the speed of the train in km/h?
- (A) 60
(B) 48
(C) 64
(D) 66
97. Five-sixths of a number is 720. What will 45% of that number be?
- (A) 346.6
(B) 388.8
(C) 392.2
(D) 344.4
98. The length of a rectangular plot is thrice of its breadth. If the area of the rectangular plot is 7803 sq. m, what is the breadth of the rectangular plot?
- (A) 51 m
(B) 153 m
(C) 104 m
(D) 88 m
99. Two dice are thrown simultaneously. The probability of getting doublets is
- (A) $\frac{1}{36}$ (B) $\frac{1}{2}$
(C) $\frac{25}{36}$ (D) $\frac{1}{6}$
100. What would be the simple interest obtained on an amount of ₹ 3,460 at the rate of 8.5% per annum after 6 years?
- (A) ₹ 1,746
(B) ₹ 1,764.60
(C) ₹ 1,766
(D) ₹ 1,756.40

PART—C : MATHEMATICS

(Marks : 100)

Each question carries 2 marks :

- 101.** Two-thirds of three-fourths of one-fifth of a number is 15. What is 30 percent of that number?
- (A) 45
(B) 60
(C) 75
(D) 30
- 102.** The ratio between the ages of a father and a son at present is 5 : 2 respectively. Four years hence, the ratio between the ages of the son and his mother will be 1 : 2 respectively. What is the ratio between the present ages of the father and the mother respectively?
- (A) 3 : 4
(B) 5 : 4
(C) 4 : 3
(D) Cannot be determined
- 103.** If the number $243 * 51$ is divisible by 9, then the value of the digit marked * would be
- (A) 3
(B) 7
(C) 5
(D) 4
- 104.** The product of two consecutive odd numbers is 4623. Which is the greater of the two?
- (A) 66
(B) 69
(C) 68
(D) 67
- 105.** A sum of money is divided among A, B, C and D in the ratio of 5 : 8 : 9 : 11. If the share of B is ₹ 2,475 more than the share of A, then what is the total amount of money of A and C together?
- (A) ₹ 9,900
(B) ₹ 11,550
(C) ₹ 10,725
(D) ₹ 9,075
- 106.** A shopkeeper sells 200 m of cloth for ₹ 9,000 at a profit of ₹ 5 per metre. What is the cost price of 1 m of cloth?
- (A) ₹ 45
(B) ₹ 40
(C) ₹ 35
(D) ₹ 30
- 107.** The area of a circle is 1386 cm^2 . What is the circumference of the circle?
- (A) 142 cm
(B) 160 cm
(C) 130 cm
(D) 132 cm
- 108.** If $x^2 + 7x + 12 = 0$ and $y^2 + 9y + 20 = 0$, then what is the relation between x and y ?
- (A) $x > y$
(B) $x < y$
(C) $x \leq y$
(D) $x \geq y$

109. A 180 m long train crosses a pole in 20 seconds. What is the speed of the train?
 (A) 15 m/sec (B) 9 m/sec
 (C) 18 m/sec (D) 12 m/sec
110. In an election between two candidates, one got 72% of the total valid votes. 25% of the total votes are invalid. If the total votes are 8200, what is the number of valid votes the other person got?
 (A) 1835 (B) 1722
 (C) 2050 (D) 4428
111. In how many different ways can the letters of the word 'WEDDING' be arranged?
 (A) 5040 (B) 2500
 (C) 2520 (D) 5000
112. 50 people consume 350 kg of rice in 30 days. In how many days will 35 people consume 50 kg of rice?
 (A) 2
 (B) 3
 (C) 5
 (D) None of the above
113. The mean of the marks obtained by 100 students is 60. If the marks obtained by one of the students was incorrectly calculated as 75, whereas the actual marks obtained by him was 65, what is the correct mean of the marks obtained by the students?
 (A) 59
 (B) 58.50
 (C) 50
 (D) None of the above
114. The difference between a two-digit number and the number obtained by interchanging the two digits of the numbers is 36. What is the difference between the two digits of the number?
 (A) 6
 (B) 4
 (C) 3
 (D) Cannot be determined
115. What will be the difference in simple and compound interest @ 12% per annum on a sum of ₹ 960 after 2 years?
 (A) ₹ 13.82
 (B) ₹ 24.04
 (C) ₹ 20.22
 (D) ₹ 31
116. If the numerator of a fraction is increased by 400% and the denominator is increased by 500%, the resultant fraction is $\frac{15}{22}$. What was the original fraction?
 (A) $\frac{9}{11}$
 (B) $\frac{5}{11}$
 (C) $\frac{7}{11}$
 (D) $\frac{11}{13}$
117. In how many different ways can 6 children be seated on 6 seats?
 (A) 360
 (B) 120
 (C) 590
 (D) 720

118. In the following number series, one number is wrong. Find out the wrong number :

17 22 32 45 67 92

- (A) 67
- (B) 32
- (C) 22
- (D) 45

119. The sum of five numbers is 555. The average of the first two numbers is 75 and the third number is 115. What is the average of the last two numbers?

- (A) 145
- (B) 290
- (C) 265
- (D) 150

120. A 50 cm wide path is to be made around a circular garden having diameter of 8 m. Approximately, what is the area of the path in square metres?

- (A) 13
- (B) 8
- (C) 18
- (D) 22

121. A triangle's perimeter is 25 cm. Which of the following may be true or is a possibility?

- I. The sides are 7 cm, 7 cm and 11 cm.
- II. It is an equilateral triangle.
- III. The value of the sides can be in integer only.

- (A) I only
- (B) I and II
- (C) III only
- (D) II and III

122. Four examiners can examine a certain number of answer papers in 10 days by working for 5 hours a day. For how many hours, a day would two examiners have to work in order to examine twice the number of answer papers in 20 days?

- (A) 8
- (B) $7\frac{1}{2}$
- (C) 10
- (D) $8\frac{1}{2}$

Directions (Q. Nos. 123–125) : Study the information and answer the questions that follow.

A basket contains 3 red balls, 5 blue balls and 2 green balls.

123. If three balls are drawn at random, what is the probability that none is blue?

- (A) $\frac{1}{6}$
- (B) $\frac{1}{12}$
- (C) $\frac{1}{5}$
- (D) $\frac{3}{10}$

124. If four balls are drawn at random, what is the probability that at least one is green?

- (A) $\frac{2}{3}$
- (B) $\frac{1}{2}$
- (C) $\frac{1}{3}$
- (D) $\frac{2}{5}$

125. If two balls are drawn at random, what is the probability that both are red?

- (A) $\frac{1}{5}$
- (B) $\frac{3}{10}$
- (C) $\frac{3}{5}$
- (D) $\frac{1}{15}$

126. The mean proportional of $(x+y)(x-y)^5$ and $(x+y)^5(x-y)$ is
- (A) $(x^2 - y^2)^3$
 (B) $(x^2 - y^2)^2$
 (C) $x^2 - y^2$
 (D) $x^2 + y^2$
127. Pipe A can fill a tank in 20 minutes and pipe B can empty it in 30 minutes. If both pipes are opened when the tank is empty, the tank will be full in
- (A) 1 hour
 (B) 38 minutes
 (C) 40 minutes
 (D) 40.5 minutes
128. A mixture of 40 litres of milk contains 10% of water. How much water must be added to make the water 20% in the new mixture?
- (A) 5 litres
 (B) 6 litres
 (C) 7 litres
 (D) 8 litres
129. A reduction of 25% in the price of bananas enables a customer to purchase 2 dozen more for ₹ 60. The original price per dozen is
- (A) ₹ 7.5
 (B) ₹ 12
 (C) ₹ 10
 (D) ₹ 8
130. If an item is sold at a discount of 25%, the shopkeeper suffers a loss of 10%. If the cost price of the item was ₹ 1,500, its marked price was
- (A) ₹ 1,200
 (B) ₹ 1,400
 (C) ₹ 1,800
 (D) ₹ 1,600
131. Two milkmen A and B rented a pasture. A grazed 23 cows for 16 days while B grazed 34 cows for 12 days. If A paid ₹ 4,416 as rent, then B has to pay
- (A) ₹ 4,416
 (B) ₹ 4,596
 (C) ₹ 4,836
 (D) ₹ 4,896
132. A man rows 750 metres in 675 seconds against the stream and returns in $7\frac{1}{2}$ minutes. His speed of rowing in still water is
- (A) 4 km/h
 (B) 6 km/h
 (C) 5 km/h
 (D) 3 km/h
133. $2 + \sqrt{2} + \frac{1}{2 + \sqrt{2}} + \frac{1}{2 - \sqrt{2}} = ?$
- (A) $2 + \sqrt{2}$
 (B) $2\sqrt{2}$
 (C) $4 + \sqrt{2}$
 (D) $2 - \sqrt{2}$

134. The least number which when divided by 20, 18 and 30 gives the same remainder 9 in each case is

- (A) 169 (B) 179
(C) 189 (D) 199

135. If $x^a \times x^b \times x^c = 1$, then $a^3 + b^3 + c^3$ is equal to

- (A) a
(B) $3abc$
(C) $a + b + c$
(D) abc

136. How many $\frac{1}{8}$'s are there in $37\frac{1}{2}$?

- (A) 300
(B) 400
(C) 500
(D) Cannot be determined

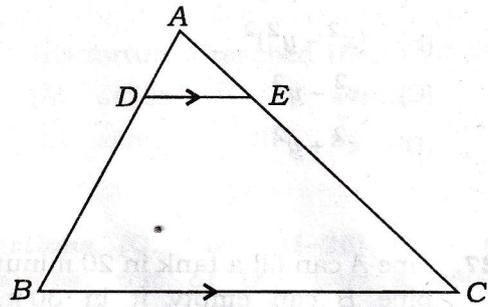
137. The system of linear equations $2x + 3y = 7$ and $4x + 6y + 14 = 0$ has

- (A) infinite solution
(B) unique solution
(C) no solution
(D) two solutions

138. The values of p so that the equation $4x^2 - 8px + 1 = 0$ has roots whose difference is 4 are

- (A) $\pm \frac{2}{5}$
(B) ± 3
(C) $\pm \frac{5}{2}$
(D) None of the above

139. In the given figure, $DE \parallel BC$, $AD = 1.7$ cm, $AB = 6.8$ cm and $AC = 9$ cm. The length of AE is



- (A) 3.2 cm
(B) 2 cm
(C) 4.1 cm
(D) 2.25 cm

140. Two buildings stand 40 m apart on level ground. If the difference between their heights is 9 m, then the distance between their tops is

- (A) 49 m
(B) 50 m
(C) 41.5 m
(D) None of the above

141. If a circle touches all n sides of a polygon of perimeter $2p$ and radius r , then the area of the polygon is

- (A) $(2p - n)r$
(B) $(p - n)r$
(C) pr
(D) $(p + n)r$

142. If V be the volume and S be the surface area of a cuboid with dimensions $a \times b \times c$, then which of the following is true?
- (A) $\frac{1}{V} = \frac{2}{S}(a+b+c)$
- (B) $\frac{1}{S} = \frac{2}{V}\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$
- (C) $\frac{1}{V} = \frac{2}{S}\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$
- (D) $\frac{1}{V} = \frac{2}{S}\left(\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}\right)$
143. A solid sphere of radius 3 cm is melted and then cast into small spherical balls each of diameter 0.6 cm. The number of small balls thus obtained is
- (A) 2000
- (B) 1000
- (C) 500
- (D) 2500
144. If the mean of the given data is 21, then the value of p is
- | | | | | | |
|-----|----|----|-----|----|----|
| x | 10 | 15 | 20 | 25 | 35 |
| f | 6 | 10 | p | 10 | 8 |
- (A) 24
- (B) 10
- (C) 28
- (D) 26
145. The value of the expression $\frac{\cot^2 41^\circ}{\tan^2 49^\circ} - \frac{2 \sin^2 75^\circ}{\cos^2 15^\circ} + \cos 18^\circ \cdot \operatorname{cosec} 72^\circ$ is
- (A) 0
- (B) 2
- (C) 1
- (D) -1
146. The shadow of a pole 3 metres high is $3\sqrt{3}$ m long. The angle of elevation of the Sun at that instant is
- (A) 45°
- (B) 60°
- (C) 75°
- (D) 30°
147. If $A(4, x)$, $B(15, 64)$ and $AB = 61$ units, then the value of x is
- (A) 36.42
- (B) 31.12
- (C) 4
- (D) 72
148. The points $(7, 3)$, $(5, 5)$ and $(-1, 11)$ are
- (A) non-collinear
- (B) collinear
- (C) equidistant from origin
- (D) concurrent
149. The angle between the hands of a clock when the time is 3:44 pm is
- (A) 136°
- (B) 144°
- (C) 152°
- (D) 158°
150. The first Republic Day of India was celebrated on 26th January, 1950. It was
- (A) Tuesday
- (B) Thursday
- (C) Friday
- (D) Monday