DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

QUESTION BOOKLET | SERIES IV

Subjects : General English, General Knowledge & Aptitude, Mathematics

BOOKLET SERIAL NO. **201000**

Marks : 300

Time : $2\frac{1}{2}$ 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 Ball Pen in following three parts:

    Part-A-General English : 50 questions, Part-B-General Knowledge & 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. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

Supposing 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 Ball Point Pen only as below :-

(A) (B) ● (D)

WHICH 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 be 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.

PART - A - GENERAL ENGLISH

Marks :100

Each question carries 2 marks :

Directions : Select the correct sentence :

1. a) After the picnic, we had lots of bread left.
b) After the picnic we had lot of breads left.
c) After the picnic we had lot of bread left.
d) After the picnic, we had lots of breads left.

2. a) I did my work quick.
b) I did my work very quick.
c) I did my work quickly.
d) None of the above

3. a) I am ready to say this at her face.
b) I am ready to say this on her face.
c) I am ready to say this in her face.
d) I am ready to say this to her face.

4. a) The villagers were enjoying winter evening around the fire.
b) The villagers were enjoying winter evening around fire.
c) The villagers were enjoying winter evening round fire.
d) The villagers were enjoying winter evening all round fire.

5. a) The team is confident to win the match.
b) The team is confident of winning the match.
c) The team is confident to win match.
d) The team is confident for winning the match.

Directions : Which option best expresses the given sentence in Indirect Speech :

6. "Are you alone my son ?" asked a soft voice close behind me.
a) A soft voice asked that what I was doing there alone.
b) A soft voice said to me are you alone son.
c) A soft voice from my back asked if I was alone.
d) A soft voice behind me asked If I was alone.

7. He said to his father, "Please increase my pocket money."
a) He told his father, "Please increase my pocket money."

b) He pleaded his father to please increase my pocket money.
c) He requested his father to increase his pocket money.
d) He asked him to increase his pocket money.

Directions : Select the word closest in meaning (synonym) to the word given :

8. Impetuous
a) Impious
b) Impressive
c) Hasty
d) Disturbing

9. Deliberately
a) Spontaneously
b) Inadvertently
c) Intentionally
d) Naturally

Directions : Choose the correct option :

10. India is committed ____ a policy of peaceful co-existence.
a) Of
b) To
c) With
d) For

11. I congratulated my classmates ____ passing the exam.
a) For
b) With
c) On
d) In

12. The boy, ____ father is a doctor, is my friend.
a) Which
b) Who
c) Whom
d) Whose

13. One must defend ____ against bullies.
a) Herself
b) Themselves
c) Oneself
d) Ourselves

14. If you study hard, you ____ a first class.
a) Are getting
b) Will get
c) Will be getting
d) Shall get

15. He ____ from malaria since the day before yesterday.
a) Has been suffering
b) Have been suffering
c) Suffers
d) is suffering

16. The thief and the eye-witness ____.

a) Has escaped   b) Has been escaping
c) Was escaping   d) Have escaped

17. The police held an inquiry _____ the murder.
a) About   b) Into
c) Over   d) Across

18. It is due to their lethargy that the plan fell
_____.
a) Through   b) Out
c) Away   d) Apart

19. We often go fishing _____ the river bank.
a) Towards   b) Inside
c) Along   d) Around

20. _____ his friends speak any English.
a) Neither of   b) Some
c) Both of   d) None of these

21. Unfortunately, I have _____ talent for music
although I have always wanted to be a famous
singer.
a) A few   b) Little
c) Plenty of   d) Few

22. If were you, I _____ be careful with my words.
a) Will   b) Would
c) Shall   d) Should

23. The mother of the dead child was over-
whelmed _____ grief.
a) By   b) With
c) From   d) For

24. The conditions necessary _____ this project
have not been met.
a) Of completion
b) For the complete of
c) of complete
d) For the completion of

**Directions : Select the word that can be
substituted for the given words/sentence :**

25. Action that is likely to make people very
angry
a) Inflationary   b) Inflammable
c) Commensurable   d) Inflammatory

26. A person who looks at the bright side of things
a) Cynic   b) Pessimist
c) Optimist   d) Sycophant

27. Not suitable for eating
a) Tasteless   b) Uneatable
c) Inedible   d) Spicy

28. The plants and vegetation of a region
a) Landscape   b) Environment
c) Flora   d) Fauna

29. Occurring at night
a) Neurotic   b) Nocturnal
c) Dark   d) Nightly

30. Study of the relation between an organism
and environment
a) Ecology   b) Geology
c) Botany   d) Entomology

**Directions : Select the option closest in
meaning to the idiom/phrase given :**

31. Right hand man
a) An honest person
b) Most efficient assistant
c) One who cannot use his left hand
d) A foolish person

32. To smell a rat
a) Signs of plague epidemic
b) Bad smell
c) Suspect foul dealing
d) To be in a bad mood

33. To be hard up
a) To look depressed
b) To keep starvation away
c) To act excitedly
d) To be short of money

34. At the eleventh hour
a) Too late
b) Too early
c) Immediately
d) At the last moment

**Directions : Fill in the blanks with the cor-
rect idiom/phrase :**

35. We'll be _____ to get this finished. It's 4pm
so we only have an hour left.
a) Working against the clock
b) At sea
c) Beating around the bush
d) Call it a day

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36. I thought John was an idiot when I first saw him just because of the way he dressed. But ___ - he is a really nice person.
a) Wear your heart on your sleeve
b) Read between the lines
c) You don't judge a tree by it's fruit
d) You don't judge a book by it's cover

37. All my brothers hold important positions in the government. I have not been as successful. In fact I am ____.
a) As busy as a beaver
b) The black sheep of the family
c) In the dog house
d) A white elephant

38. They did not want to reveal their plants but he ____.
a) Let sleeping dogs lie
b) Hit the bull's eye
c) Let the cat out of the bag
d) Kill two birds with one stone

39. I know everything seems very bad at the moment but ____. I'm sure something good will come out of it.
a) Ignorance is bliss
b) Throw caution to the wind
c) Every cloud has a silver lining
d) Eat like a horse

40. I tend to ____ over most controversial issues. I'm never sure which side of the argument to support.
a) Call a spade a spade
b) Sit on the fence
c) Play by the ear
d) Black out

Directions : Select the wrongly spelt word:

41. a) Germinate b) Geometry
c) Generalise d) Geniune

42. a) Beneficiary b) Jewellry
c) Military d) Literary

43. a) Commission b) Omission
c) Possession d) Occassion

44. a) Pronounciation b) Millennium
c) Occurrence d) Misspell

Directions : Select the correctly spelt word:

45. a) Renumerrtion b) Renumaration
c) Renumertion d) Remuneration

46. a) Parrallel b) Parralel
c) Parallel d) Paralel

47. a) Beificial b) Benificial
c) Beneficial d) Benifical

48. a) Adultarate b) Adulterate
c) Adultrate d) Adulltrate

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Directions : Select the word opposite in meaning (antonym) to the word given :

49. Invalid
a) Healthy b) Recovering
c) Sound d) Deteriorating

50. Considerate
a) Ignorant b) Lazy
c) Angry d) Insensitive

PART - B - GENERAL KNOWLEDGE & APTITUDE

Marks : 100

Each question carries 2 marks :

51. "Bombs and Pistols do not make revolution. The sword of revolution is sharpened on the whetting-stone of ideas". Who said this ?
a) Azad
b) Bhagat Singh
c) Lala Lajpat Rai
d) Mahatma Gandhi

52. Acid Rains are produced by
a) CO_2, CO and SO_2
b) Excess release of carbon monoxide by incomplete combustion
c) Excess NO_2 and SO_2 from burning fossil fuels
d) Ozone layer depletion

53. Which among the following international agencies publishes the 'ENERGY TRANSITION INDEX'?
a) The World Bank
b) The World Economic Forum
c) The International Energy agency
d) The International Monetary Fund

54. Which among the following was the first registered Trade Union of India ?
a) Indian Trade Union Congress
b) Madras Labour Union
c) Hindu Mazdoor Sabha
d) Centre of Indian Trade Unions

55. The Universities of Calcutta, Bombay and Madras were established as the outcome of which of the following, often referred as Magnacarta of English Education in India ?
a) Hunter Commission Report, 1882
b) Indian Universities Act, 1904
c) Hartog Committee, 1929
d) Sir Charleswood's Dispatch, 1854

56. Which one of the following is not related to United Nations ?
a) Multilateral Investment guarantee agency
b) International finance corporation
c) International center for settlement of investment dispute
d) Bank for International settlement

57. Who was first recipient of the Padma Shree

award from Meghalaya ?
a) Patricia Mukhim
b) Manas Chaudhuri
c) Prof. Badaplin War
d) Silverine Swer

58. Point Calimere Wildlife Sanctuary is situated in which of the following State ?
a) Haryana
b) Jammu and Kashmir
c) Tamil Nadu
d) Gujarat

59. 'Pusa decomposer' is related to which one of the following ?
a) Organic farming
b) Stubble burning
c) Sugar Production
d) Soil reclamation

60. Three of the following four are alike in a certain way and hence form a group. Which one does not belong to the group ?
a) Year
b) Month
c) Week
d) Time

61. Three of the following four are alike in a certain way and hence form a group. Which one does not belong to the group ?
a) Pencil
b) Chalk
c) Note book
d) Crayon

62. Which of the following Organizations/Institutions launched the behaviour change campaign 'Navigating the New Normal' and its website to help people follow norms to contain the spread of Covid-19 ?
a) The NITI Aayog
b) The Finance Ministry
c) The International Monetary Fund
d) World Health Organisation

63. 'BHARAT GAURAV' Scheme is related to
a) Infrastructure
b) Education
c) Tourism
d) Women Safety

64. Which of the following is the objective of 'Nadu-Nedu' programme of Andhra Pradesh?
a) Transform Government schools to improve learning outcomes
b) Control the infant Mortality rate
c) Increase pupil-teacher ratio in government

schools
d) Empowerment of disabled person

65. 'DOSTI' trilateral coast guard exercise is organized among
a) India, China and South Korea
b) Maldives, Sri Lanka and India
c) Bangladesh, India and Sri Lanka
d) India, Bangladesh and Maldives

66. Istanbul convention is related to
a) Anti-human trafficking
b) Child Education
c) Violence against women and domestic violence
d) Poverty eradication

67. The term 'PASIPHAE' is related to
a) Solar mission
b) Sky surveying project
c) Higher education
d) Women safety

68. Which of the following country gave assent to non-Muslim civil marriage ?
a) Saudi Arabia
b) UAE
c) Pakistan
d) Oman

69. Bloemfontein is the judicial capital of
a) South Africa
b) Denmark
c) South Sudan
d) The Netherlands

70. Delhi Declaration refers to
a) Climate change summit
b) Regional Security Summit on Afghanistan
c) Initiative to curb pollution in Delhi
d) Global initiative to eradicate domestic violence

71. Zircon hypersonic cruise missile is launched by which of the following nation ?
a) Russia
b) United States
c) Japan
d) North Korea

72. Which of the following articles of the Constitution of India deals with Financial Emergency?
a) Article 352
b) Article 356
c) Article 360
d) Article 370

73. Find the next number in the series :
5, 13, 25, 41, ?
a) 58
b) 61

c) 96
d) 73

74. Alfred buys an old scooter for Rs.4700.00 and then spends Rs.800.00 on its repair. If he sells the scooter for Rs.5800.00, the gain percent is
a) 6.90%
b) 5.45%
c) 9.3%
d) 12.6%

75. 'Much' is related to 'Many' in the same way as 'Measure' is related to
a) Calculate
b) Count
c) Weigh
d) Measurement

76. 'Clue' is related to 'Mystery' in the same way as 'warning' is related to
a) Precaution
b) Disaster
c) Dream
d) Danger

77. Select the related word from the given alternatives SEISMOMETER : EARTHQUAKES : THERMOMETER : ?
a) Fever
b) Doctor
c) Mercury
d) Temperature

78. Select the related word from the given alternatives
PLAY : ACTOR : CONCERT : ?
a) Musician
b) Piano
c) Percussion
d) Symphony

79. Anjali says, "He is the only son of the father of my sister's brother." How is that person related to Anjali ?
a) Brother
b) Father
c) Uncle
d) Cousin

80. From the given alternative words, select the word which cannot be formed using the letters of the given word (Using the alphabet only once)
THERMODYNAMICS
a) Modern
b) Dynamo
c) Mathematics
d) Mother

81. ERID is related to DIRE in the same way as RIPE is related to ___ ?
a) EPIR
b) PERI
c) EPRI
d) IPRE

82. 10.8 x 5.5 x 8.4 = ?
a) 458.69
b) 489.96
c) 498.96
d) 485.69

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83. Output of a particular program followed the pattern given below. Find the missing number :
112, 141, 170, 199, ___, 257, 286

a) 222   b) 238
c) 245   d) 228

84. The average age of a group of 15 students was 14. The average age increased by 2 year when two new students joined the group. What is the average age of the two new students who joined the group ?

a) 28   b) 16
c) 31   d) 22

85. Which of the following years is not a leap year ?

a) 1600   b) 2100
c) 2000   d) 2024

86. Vicky can do a work in 15 days while Kenneth can do the same in 20 days. If both of them start doing the work at the same time, what fraction of work will be left after 4 days ?

a) $\dfrac{8}{15}$ b) $\dfrac{7}{15}$

c) $\dfrac{4}{15}$ d) $\dfrac{3}{4}$

87. 14.5% of 608 = ?

a) 88.16   b) 86.18
c) 81.68   d) 86.88

88. 840 ÷ 40 ÷ 0.5 = ?

a) 8.5   b) 21
c) 10.5   d) 42

89. What would be the simple interest accrued in 4 years on a principal of Rs.18,440 @ 15% p.a ?

a) Rs.11,075   b) Rs.12,250
c) Rs.11,064   d) Rs.12,985

90. A florist bought 360 roses at Rs.8 per dozen. He sold all of them at Rs.1 each. He made a profit of ___ ?

a) Rs.240   b) Rs.315
c) Rs.120   d) Rs.180

91. The principal reason why it is better to have two eyes than one is that

a) By having two eyes we can distinguish colour easily

b) By having two eyes we can easily see in the dark as well as in dim light

c) It gives a man a type of vision known as mosaic vision

d) It enhances distance and depth perception in us.

92. Which one of the following is issued by the court in case of an illegal detention of a person?

a) Habeas Corpus   b) Mandamus
c) Certiorari   d) Quo-warranto

93. The concept of 'Directive Principles of State Policy' incorporated in the Constitution of India was borrowed from the Constitution of

a) Australia   b) USA
c) Canada   d) Ireland

94. Who coined the name 'PAKISTAN' ?

a) Mohammad Ali Jinnah
b) Fazlul Haq
c) Liaquat Ali Khan
d) Chaudhry Rehmat Ali

95. Which country has the most islands in the world, the majority of which are uninhabited ?

a) Finland   b) Sweden
c) Indonesia   d) Australia

96. If Ramesh's mother's brother is Alok's father's brother, then Ramesh's mother is Alok's

a) Grandmother   b) Aunt
c) Cousin   d) Sister-in-law

97. In a certain code 'GIVE' is written as 'VIEG' and 'OVER' is written as 'EVRO'. How will 'DISK' be written in that code ?

a) SIDK   b) KISD
c) KDSI   d) SIKD

98. 0.08 x ? x 1.6 = 0.2944

a) 1.3   b) 0.4
c) 0.2   d) 2.3

99. 36% of 4800 x 0.2% of 1320 = ?

a) 4535.52   b) 4551.36
c) 4561.92   d) 4572.48

100. 93 x 45 ÷ 25 = ?

a) 167.4   b) 837
c) 279   d) 130.2

PART - C - MATHEMATICS

Marks : 100

Each question carries 2 marks :

101. A takes 10 days less than the time taken by B to finish a piece of work. If both A and B together can finish the work in 12 days, find the time take by B alone to finish the work.
a) 20   b) 30
c) 35   d) 40

102. A two digits number is 4 times the sum of its digits. If 18 is added to the number, the digits are reversed. Find the number
a) 22   b) 24
c) 26   d) 28

103. If three times the larger of two numbers is divided by the smaller one, we get 4 as the quotient and 3 as the remainder. Also if seven times the smaller number is divided by the larger one we get 5 as the quotient and 1 as the remainder. Find the smaller number
a) 15   b) 16
c) 17   d) 18

104. What is the 19th term of the sequence

$$a(n) = \frac{n(n-2)}{n+3}$$

a) $\dfrac{303}{22}$ b) $\dfrac{332}{22}$

c) $\dfrac{323}{19}$ d) $\dfrac{323}{22}$

105. Divide 16 into two parts such that twice the square of the larger part exceeds the square of the smaller part by 164. Find the larger part
a) 12   b) 10
c) 8   d) 6

106. One-fourth of a herd of camels was seen in the forest. Twice the square root of the herd had gone to the mountain and the remaining 15 camels were seen on the bank of the river. Find the total number of camels.
a) 30   b) 32
c) 34   d) 36

107. Two trains running in opposite directions cross a post standing on the platform in 30 seconds and 20 seconds respectively and they cross each other in 25 seconds. Then the ratio of their speed is
a) 3 : 4   b) 2 : 3
c) 3 : 5   d) 1 : 2

108. In a school, the ratio of boys to girls is 4 : 5. If 100 girls leave the school the ratio becomes 6 : 7. How many girls are there in the school ?
a) 1200   b) 1500
c) 1400   d) 1300

109. In an Examination, the number of those who passed and the number of those who failed were in the ratio 3 : 1. Had 8 more appeared and 6 less passed, the ratio of passes to failures would have been 2 : 1. Find the number of candidates who appeared.
a) 132   b) 134
c) 136   d) 138

110. In an election between two candidates, one candidate secured 43% of the total votes polled and lost the election by 4900 votes. Find the total number of votes polled
a) 33000   b) 34000
c) 35000   d) 37000

111. 5% of the population of a certain town was killed in the bombarded and 70% of the remaining died in panic. If the population of the town is now 44175, find the population of the town at the beginning before the bombardment
a) 50000   b) 55000
c) 60000   d) 65000

112. Find the measure of an angle, if seven times its complement is 10° less than three times its supplement
a) 15°   b) 20°
c) 25°   d) 30°

113. The mean of first 8 observations is 18 and last 8 observations is 20. If the mean of all 15 observations is 19, find the 8th observation
a) 17   b) 18
c) 19   d) 21

114. Find the smallest number which when divided by 35, 56 and 91 leaves remainder 5 in each case.
a) 3640   b) 3645
c) 3635   d) 3655

115. Evaluate : 16% of 150 - 25% of 84 + 8% of 550
a) 45   b) 47
c) 49   d) 54

116. The sum of first n even natural number is given by the relation s = n(n+1). Find n if the sum is 420
a) 18   b) 19
c) 20   d) 21

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117. By selling an article for Rs.810, a man loses 10%. At what price should he sell it in order to gain 8% ?
a) Rs.970   b) Rs.985
c) Rs.972   d) Rs.982

118. A manufacturer buys raw materials worth Rs.50,000 and pays a sales tax of 40%. He sell the ready stock at Rs.78000 and charges sales tax at 8%. Find the value added tax (VAT) paid by the manufacturer.
a) 3240   b) 4240
c) 5240   d) 6240

119. A man spends 65% of his salary and saves Rs.525 per month. Find his monthly salary.
a) Rs.1300   b) Rs.1500
c) Rs.1900   d) Rs.2500

120. If 2 is added to the numerator of a fraction it reduces to $\frac{1}{2}$ and if 1 is subtracted from the denominator it reduces to $\frac{1}{3}$. Find the fraction
a) $\frac{3}{10}$ b) $\frac{10}{3}$
c) $\frac{2}{3}$ d) $\frac{3}{2}$

121. The denominator of a fraction is 3 more than its numerator. The sum of the fraction and its reciprocal is $2\frac{9}{10}$, find the fraction
a) $\frac{2}{3}$ b) $\frac{2}{5}$
c) $\frac{3}{5}$ d) $\frac{3}{2}$

122. If $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a - b\sqrt{3}$, then the values of 'a' and 'b' are
a) 6   b) 8, 9
c) 11, 6   d) 9, 11

123. If $x = 3 + \sqrt{8}$, then the value of $x^2 + \frac{1}{x^2}$ is
a) 24   b) 34
c) 38   d) 42

124. Simplify : $\frac{16 \times 2^{n+1} - 4 \times 2^n}{16 \times 2^{n+2} - 2 \times 2^{n+2}}$
a) $\frac{1}{2}$ b) $\frac{2}{3}$
c) $\frac{3}{4}$ d) $\frac{1}{3}$

125. If x, y and z are positive real numbers then $\sqrt{x^{-1}y}.\sqrt{y^{-1}z}.\sqrt{z^{-1}x}$ is -
a) 0   b) 1
c) 2   d) $\frac{1}{2}$

126. A and B each have certain number of oranges. A says to B "If you give me 10 of your oranges, I will have twice the number of oranges left with you". B replies, "If you give me 10 of your oranges, I will have the same number of oranges as left with you". Find the number of oranges B have
a) 40   b) 50
c) 60   d) 70

127. Eight men can dig a field in 14 days working 6 hours a day. In how many days can 7 men dig the same field, working 8 hours a day.

a) 10   b) 11
c) 12   d) 13

128. The length of a chain used as boundary of the semi-circular park is 90cm. Find the area of the park

a) 450.25cm²   b) 475.50cm²
c) 481.25cm²   d) 495.75cm²

129. A field is in the form of a circle. The cost of ploughing the field at Rs.15 per m² is Rs.57750. Find the cost of fencing the field at Rs.34 per metre.

a) Rs.7280   b) Rs.7380
c) Rs.7480   d) Rs.7580

130. Find the ratio between the total surface area of a cylinder and its curved surface area, given that its height and radius are 7.5cm and 3.5cm respectively.

a) 15:12   b) 17:15
c) 22:15   d) 24:21

131. The sum of two numbers is 1000 and the difference between their square is 256000. Find their difference

a) 254   b) 256
c) 258   d) 260

132. A is elder to B by 2 years. A's father F is twice as old as A and B is twice as old as his sister S. If the ages of the father and sister differ by 40 years, find the age of A's father F.

a) 50   b) 48
c) 52   d) 54

133. 30 men can build a wall in 50 days. How many more men are required to build another wall, double in size in 75 days ?

a) 8   b) 10
c) 12   d) 14

134. Calculate the compound interest on Rs.1000 for 2 years at $8\frac{1}{2}$% per annum. Interest being compounded annually

a) 165.23   b) 170.23
c) 177.23   d) 187.33

135. A 1.5m tall boy stands at a distance of 3m from the lamp-post and casts a shadow of 4.5m on the gound. Find the height of the lamp-post.

a) 2.3m   b) 2.2m
c) 2.5m   d) 2.4m

136. From the top of a building 60m high, the angle of depression of the top and bottom of a tower are observed to 30° and 60°. Find the height of tower

a) 30m   b) 40m
c) 20m   d) 50m

137. The circumference of two circles are in the ratio 2:3. Find the ratio of their areas

a) 4:5   b) 4:7
c) 5:9   d) 4:9

138. A fort had provisions for 300 men for 90 days. After 20 days, 50 men left the fort. How long would the food last at the same rate ?

a) 80   b) 82
c) 84   d) 86

139. A vertical pole 2m 80cm high, casts a shadow 1m 60cm long. Find the length of the shadow casted by a 5m 25cm high pole.

a) 2m   b) 3m
c) 3.5m   d) 4m

140. A shopkeeper bought a T.V. at a discount of 30% of the listed price of Rs.24000. The shopkeeper offers a discount of 10% of the listed price to his customer. If the Value Added Tax (VAT) is 10%. Find the amount paid by the customer.

a) 22560   b) 23540
c) 23760   d) 23960

141. A man bought a plot for Rs.200000 and a car for Rs.220000 at the same time. The plot appreciates at the rate of 25% per annum. While the price of car depreciates at the rate of 20% per annum. If the man sold the plot and the car after 2 years, find his profit

a) 23000   b) 23300
c) 33300   d) 33500

142. A number 4.0 is wrongly read as 4.48. Find the percentage error.

a) 8%   b) 10%
c) 12%   d) 14%

143. A granary is in the shape of a cuboid of size 12m x 6m x 4m. If a bag of grain occupies a space of 0.75m³. How many bags can be stored in the granary ?

a) 362   b) 376

c) 384   d) 392

144. In a mixture of 45 litres, the ratio of milk to water is 13:2. How much water must be added to this mixture to make the ratio of milk to water as 3:1

a) 4   b) 5
c) 6   d) 7

145. The area of the trapezium is 210cm^2 and its height is 14cm. If one of the parallel sides is longer than the other by 6cm, find the two parallel sides

a) 6, 12   b) 8, 14
c) 12, 18   d) 10, 16

146. The area of rectangle gets reduced by 80 square units if its length is reduced by 5 units and the breadth is increased by 2 units. If we increase the length by 10 units and decrease the breadth by 5 units, the area is increased by 50 square units. Find the length and breadth of the rectangle.

a) 30, 40   b) 40, 30
c) 40, 50   d) 50, 40

147. In what time will Rs.1200 earn an interest of Rs.240 at 5% ?

a) 2 years   b) 3 years
c) 4 years   d) 5 years

148. Calculate the compound interest for the second year on Rs.4000 invested for 3 years at 10% per annum.

a) Rs.420   b) Rs.440
c) Rs.460   d) Rs.480

149. Find the rate of interest per year, if the interest charged for 8 months be 0.06 times of the money borrowed

a) 7%   b) 8%
c) 9%   d) 6%

150. If the zeroes of the quadratic polynomial P(x) = 3x^2 + (2K-1)x-5 are equal in magnitude but opposite in sign, then the value of K is

a) $\dfrac{3}{2}$ b) $\dfrac{1}{2}$

c) $\dfrac{3}{5}$ d) $\dfrac{5}{3}$

****

$\frac{13}{5}$ $\frac{25}{13}$ $\frac{41}{25}$ $\frac{41}{20}$

$\frac{5}{8} + \frac{13}{12} + \frac{25}{16} + 4\frac{20}{60}$

$\frac{4}{4}$ $\frac{0.05}{}$ $\frac{2}{250}$ $\frac{22}{22}$

$61\ 55\ \overline{)\ 300}$
$41\ \ 4\ \ \ \ 275$
$\overline{aa\ \ 5}\quad \overline{5}$

$CP = 47k + 800$

$SP = 47k$

$CP = 55k$

$SP = 58k$

$\Rightarrow\ \% = \frac{SP - CP}{CP} = \frac{300}{5500} = $

$Profit = \frac{300}{100}x$

Son of the father of

my sis's brother

12440

$\frac{108 \times 55 \times 84}{10 \times 10 \times 10}$

$A = \frac{Prt}{100}$

$\Rightarrow 1200 \times \frac{5}{100} = 60$

$CI = 4000$

$4\pi r^2$

$\frac{4}{3}\pi r^2$

15

$\Rightarrow \frac{4}{3} \times 45 \times 45 \times \pi$

$60 \times 45 \times 10$

$= 2730 \times 3.1415$

$\frac{2730}{.3}$
$\overline{8190}$

$2\pi rh$

$\frac{\pi rh}{4\pi rh} = \frac{1}{4}$

$x + y = 1000$

$x - y = 254$

$\frac{n}{50 \times 30}$

$n\ men \times 75 \times \frac{2 \times 75}{50 \times 30}$

$A = 400\left(1 + \frac{10}{100}\right)^3$

$= 4000\left(\frac{11}{10}\right)^3$

$= 4x$

108
55
$\overline{540}$
540
$\overline{5940}$
84
$\overline{23760}$
47520
$\overline{498960}$
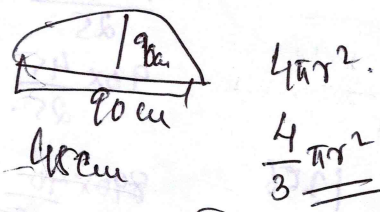
11
121
$\frac{11}{121}$
$\frac{121}{1331}$

15
15324
441
$3\overline{)5324}$
12

$\frac{2\pi r_1}{2\pi r_2} = 2:3$

$\Rightarrow r_1 = \frac{2}{3} r_2$
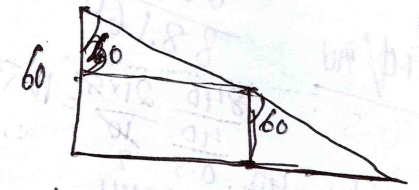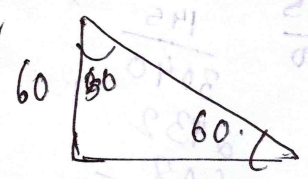
$\left(\frac{r_1}{r_2}\right)^2 = \frac{4}{9}$

$\frac{4.48 - 4}{4}$

$= \frac{0.48}{4} = 0.12$

$= 12\%$

AEO-23

IV

$608 \times \dfrac{14.5}{100}$

$\dfrac{8816}{100}$

21

$8\cancel{40}/40$

$\dfrac{}{0.5}$

$\Rightarrow 21$

$\Rightarrow \dfrac{21 \times 18}{8}$

$S_I = \dfrac{P \times r \times t}{100}$

360
240
$\overline{120}$

360×8

$\dfrac{3.}{360 \times 8/12}$

$724 = 242$

360

$\dfrac{8}{100} \times n \times 16 = \dfrac{2944}{1000}$

$n = \dfrac{2944}{8 \times 16}$ $\dfrac{46}{184} \dfrac{23}{4}$

$6\% \ 4800 \times 0.2\% \ 1320$

$\dfrac{36}{100} \times 4800 \times \dfrac{0.2}{100} \times 1320$

$36 \times 48 \times 2 \times 132$

AEO-23

608
$\dfrac{145}{3040}$
2432
608
$\overline{88.160}$

$\dfrac{840}{40}$ $\dfrac{21 \times 5}{10} = 10.5$
$42 \cdot 0.5 \cdot \dfrac{2}{2}$
2 or 1844
$\dfrac{6}{64}$

$\dfrac{96}{36}$
$\overline{576}$
$\overline{288}$
$\overline{3456}$

$240 \to 360$
$360 - 240$

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1256

24
24

1156
$\dfrac{480}{1636}$
1636

$\dfrac{3456}{3456}$
132
$\overline{6912}$

$A \to$ unit 10368

6912

6912
108
6912
10368
3456
$\overline{192}$

$\dfrac{93 \times 45}{25}$

$93 \times \dfrac{45}{25}$

$\dfrac{840 \times 40}{0.5}$

$840 \times \dfrac{1}{40/0.5}$

67.5

$5\overline{)837}$ 84
$\dfrac{5}{33}$
$\dfrac{30}{37}$
$\dfrac{35}{20}$ 34

$B \to n$

$\Rightarrow \dfrac{1}{n}$

$A = \dfrac{1}{n-10}$

$\dfrac{84}{136}$
192
156

$\dfrac{1}{n-10} + \dfrac{1}{n} = \dfrac{1}{12}$

$\Rightarrow \dfrac{n + n - 10}{(n-10)n} = \dfrac{1}{12}$

$\Rightarrow (2n - 10) \times 12 = n^2 - 10n$

$\Rightarrow 24n - 120 = n^2 - 10n$

$\Rightarrow n^2 - 34n - 120 = 0$

$\Rightarrow n = \dfrac{34 \pm \sqrt{34^2 + 480}}{2}$

$\Rightarrow n = \dfrac{34 + \sqrt{1156}}{2}$

12

IV

$4 : 5$

$\Rightarrow \dfrac{4x}{b} \quad \dfrac{5x}{9}$

$\Rightarrow \dfrac{4x}{5x-100} = \dfrac{6}{7}$

$\Rightarrow 28x = 30x - 600$

$\Rightarrow 600 = 2x$

$\Rightarrow x = 300$

$\therefore 1500 - 100 = 1400$

$\dfrac{1250}{540} \quad \dfrac{P}{F} = \dfrac{3}{1} \Rightarrow 3x \, \& \, x$

$\overline{161.05} \quad P+F = A$

$\dfrac{7}{1260} \quad A = 3x + 4x$

$\quad \boxed{61} \quad = 4x$

$A = 4x \cdot 8 \Rightarrow P = \dfrac{3x}{1x}$

$7(180-x) = 3(180+x) - 10 \quad A_2 = (3x-6) + 1x + 8$

$\Rightarrow 1260 + 10 - 540 = 10x$

$\therefore \dfrac{A_1}{A_2} = \dfrac{2}{1}$

Q $\Rightarrow$

$7x - 10$

$7x = 3(180-x) - 10°$

$\Rightarrow \dfrac{4x}{(3x-6)+1x+8} = 2$

$\Rightarrow 4x = 4x + 21$

$\Rightarrow 10x = 540 - 10$

$= 530$

$\Rightarrow x = 53$

$\dfrac{43}{100} \times x$

$\dfrac{3400}{100} \times 43 \quad \dfrac{136}{1462}$

14620

$\overline{} \quad 14620$

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$x = 4(a+b)$

$24 = (2+6)6 = 24$

$a \times 3 = \dfrac{x \times 3}{y}$

$\dfrac{x \times 3}{y} + 3 = 4$

$\dfrac{7 \times y}{x} + 1 = 5$

$\Rightarrow 3x + 3y = 4y$

$\& \Rightarrow 3x = y$

$\Rightarrow 7y + x = x$

$\dfrac{P}{F} = \dfrac{3}{1} \Rightarrow$

$\Rightarrow \dfrac{P}{F} = 3 - 1 a(19) = \dfrac{19(17)}{22}$

$\dfrac{19}{17} \quad \dfrac{133}{19} \quad \dfrac{19}{323}$

Let x be the 1

$\dfrac{x}{30} \quad \& \quad \dfrac{490}{42}$

$\dfrac{x}{30} + \dfrac{y}{20} = \dfrac{42}{70}$

$\dfrac{43}{100} x + 49000 = x$

$49000 = \dfrac{57}{10} x$

$57 - 43 = 14$

$\dfrac{14620}{49000} \Big/ 43$

$\dfrac{49000 \times 10}{14} = x$ IV

AEO-23

13

728 104 16
3640 7)728 15. 3
35   7   80
7   28 6
        27

3645

$$\frac{16}{100} \times 150 - \frac{25}{100} \times 84 + \frac{8 \times 550}{100}$$

220
120
340
105
235
20
000

$$= \frac{16 \times 150 - 25 \times 84 + 8 \times 550}{100}$$

$$= \frac{5(16 \times 30 - 5 \times 84 + 8 \times 110)}{100}$$

1681

$$= \frac{5 \times 4}{100}(4 \times 30 - 5 \times 21 + 2 \times 110)$$

$$\Rightarrow 420 = n^2 + n$$

89
34
35
127
1681
65
19
595

$$\Rightarrow n = \frac{-1 \pm \sqrt{1 + 1680}}{2}$$

1900
1245

$$= \frac{-1 \pm \sqrt{1681}}{2}$$

65 19.1245
15
325
65
857
6

$$= \frac{-1 \pm 39}{2} = 19.1245$$

$$= \frac{38}{2} = 19$$

$$70x + 525 = x$$

$$\Rightarrow \frac{65}{100}x + 525 = x \cdot \frac{65}{100} \cdot 19$$

1500
65 2
25
325

$$\Rightarrow x = \frac{65x}{100} + \frac{25}{100}x$$

$$x = \frac{65x}{100} + \frac{525}{930}$$

105 930
528 162

$$\Rightarrow \frac{28}{100}x = 525$$

2560
1625

$$\Rightarrow x = 21$$

75

$$\frac{x}{y13}$$

$$\frac{2}{5} + \frac{5}{2} \over 10$$

$$\frac{x+2}{y} \Rightarrow$$

$$\Rightarrow 5 + 2\sqrt{3} = 7a - 12b$$

$$\Rightarrow 5 + 2\sqrt{3} = 7a - 4 \times \sqrt{3}b$$

'a'

$$\frac{(16 \times 2 - 4)2^n}{(16 - 2)}$$

$$\frac{16 \times 2 - 4}{}$$

$$\frac{(16 \times 2 - 4)2^n}{(16 - 2) \times 2^{n+2}}$$

$$\frac{82 - 4}{14} \times \frac{1}{2}$$

$$\Rightarrow \frac{28}{4 \times 14}$$

$$\sqrt{\frac{y}{x}} \cdot \sqrt{\frac{2}{y}} \times \sqrt[2]{\frac{x}{2}}$$