St. Ursula Girls' High School Nagpur
FINAL EXAM – 2020

Class : IX (ADEFG)

Time : 2.00 Hr. **Subject : Math-I** **Marks : 40**

Q. I A) Solve by choosing the correct option **(4)**

1. If 6:5 = y :20 then what will be the value of y\
   a) 15 b) 24 c) 18 d) 22.5
2. For different types of investments what is the maximum permissible amount under section 80C of income tax?
   a) Rs. 1,50,000 b) Rs. 2, 50,000
   c) Rs. 1,00,000 d) Rs. 2,00,000
3. What is the mode of 19] 19] 15] 20] 25] 15] 20] 15\
   a) 15 b) 20
   c) 19 d) 25
4. What is the class mark of class 25-35?
   a) 25 b) 35 c) 60 d) 30

Q. I B) Solve the following ¼4½

1. Convert 37:500 into percentage.
2. A person has earned his income during the financial year 2017-18, then what will be his assessment year.
3. Find the medium of 59, 75, 68, 70, 74, 75, 80
4. Who according to age group is considerd as a super senior citizen.

Q. I A) Perform any of the two activities **(4)**

i) Complete the following table (Cumulative freq. more than type)

Class	Tally Marks	Frequency.	
0 - 5	𝍸 |	6	42
5 - 10	𝍸 𝍸 ||	☐	☐ - 6 = ☐
10 - 15	𝍸 𝍸 𝍸	15	☐

ii) Radhika Spends 60% of her monthly income of Rs. 10,000 so what is her monthly saving?

Soluttion 60% of Rs. 10,0000 - ☐

Saving = Rs. ☐ & Rs. ☐ & Rs. ☐

3½ If $\frac{a}{b}=\frac{5}{2}$ then find the value of $\frac{6a^2+5b_2}{6a^2-5b_2}=$

$\frac{a}{b}=\frac{5}{2}$ $\therefore \frac{a^2}{b^2}=$ ☐

$\frac{a^2}{b^2} x \frac{6}{5} =$ ☐ x $\frac{6}{5}$

$\frac{6a^2}{5b^2} = \frac{25}{4} x$ ☐ = $\frac{15}{2}$

by componendo - dividendo

$\frac{6a^2 + 5b^2}{6a^2 - 5b^2} =$ ☐

$\therefore \frac{6a^2 + 5b^2}{6a^2 - 5b^2} = \frac{17}{13}$

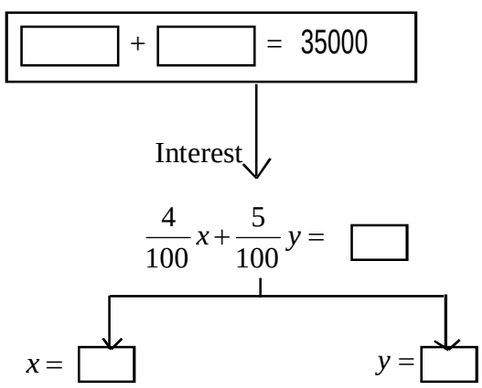
Q. II B) Solve any four of the following ॐ **(8)**

1. If $\frac{a}{b} - \frac{2}{3}$, then find the value of $\frac{4a + 3b}{3b}$
2. Alka spends 90% of the money that she receives every month and saves Rs. 120. How much money does she get monthly?
3. Yield of soyabean per acre in quintal in Mukund's field for 7 years was 10, 7, 5, 3, 9, 6, 9. Find the mean of yield per acre.
4. a, b, c are in continued proportion. If a = 3 and c=27 then find b.
5. Mr. Mahatre is 50 years old. His income tax without adding any cess is Rs. 1,27,000. If 2% education cess and 1% secondary and higher education cess to included then what will be his total income tax.

Q. III A) Complete any one of the following activity **(3)**

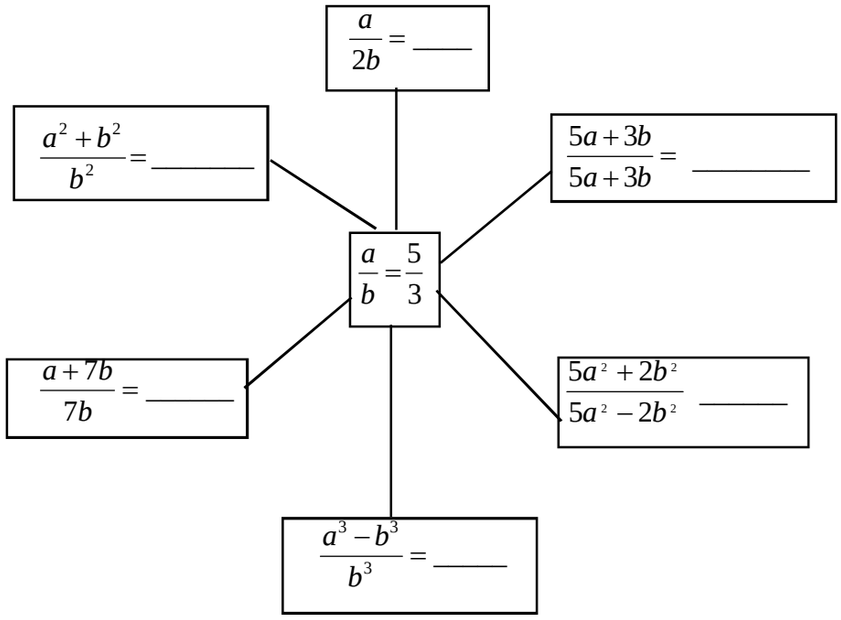
i) Amita invested some part of 35000 rupees at 4% and the rest at 5% interest for one year. Altogether her gain was Rs. 1530. Find out the amounts she had invested at two different rates. Write your answer in words.

Invested Rs. x at 4% rate Invested Rs y at 5% rate



Answer (in words) ॐ ☐

2) Complete the following activity **(4)**



Q. 3 **B) Solve any two of the following** **(6)**

i) Which number should be substracted from 7, 12 and 18 such that the resultant numbers are in continued proportion?

ii) Kailash used to spend 85% of his income. When his income increased by 36% his expenses also increased by 40% of his earlier expenses. How much percentage of his earnings he saves now?

iii) The following table shows the number of Buses and Trucks in nearest lakh. Draw percentage bar-diagram.

Year	No. of Trucks	No. of Buses
2006-2007	47	9
2007-2008	56	13
2008- 2009	60	16
2009-2010	63	18

iv) In a 'tree plantation' project of certain school there are 45 students of 'Harit Sena'. The record of trees planted by each student is given below.

3, 5, 7, 6, 4, 3, 5, 4, 3, 5, 4, 7, 5, 3,
6, 6, 5, 3, 4, 5, 7, 3, 5, 6, 4, 4, 3, 5,
6, 6, 4, 3, 5, 7, 3, 4, 5, 7, 6, 4, 3, 5, 4, 4, 7

prepare a frequency distribution table of the data.

Q. 4 **Solve any two of the following** **(8)**

i. **Solve** $\frac{16x^2-20x+9}{8x^2+12x+21} = \frac{4x-5}{2x+3}$

ii. Mrs Hinduja's age is 50 years. Last year her taxable income Rs. 16,30,000. How much income tax has she to pay?

iii. The data is given for 62 students in a certain class regarding their mathematics marks out of 100. Take the classes 0-10, 10-20, and prepare frequency distribution table and cumulative frequency table more than or equal type.

55, 60, 81, 90, 45, 65, 45, 52, 30, 85, 20, 10,
75, 95, 09, 20, 25, 39, 45, 50, 78, 70, 46, 64,
42, 58, 31, 82, 27, 11, 78, 97, 07, 22, 27, 36,
35, 40, 75, 80, 47, 69, 48, 59, 32, 83, 23, 17,
77, 45, 05, 23, 37, 38, 35, 25, 46, 57, 68, 45, 47, 49

From the prepared table, answer the following questions :

i) How many students obtained marks 40 or above 40?

ii) How many students obtained less than 10 marks?

iii) How many students obtained less than 60 marks?

iv) Find the comulative frequency of the class 50-60?

Q. V Solve any one of the following **(3)**

i) $\frac{x}{x+2y+z} = \frac{y}{y+2z+x} = \frac{z}{z+2x+y}$ and $x+y+x \neq 0$

then show that each ratio is equal to $\frac{1}{4}$.

ii) The following information is regarding marks in mathematics, obtained out of 40, scored by 50 students of 9th std. in the first unit test.

Class Interva	frequency (no. of students
0-10	02
10-20	12
20-30	20
30-40	16
	Total N = 50

Answer the following questions.

i) For the class interval 10-20 write the lower and upper class limit.

ii) How many students obtained marks less than 10?

iii) What is the class interval of the above classes.

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