PRISM WORLD

Std.: 9 (English) **Maths - I** **Marks: 40**

Date: **Time: 2 hour**

Chapter: 5 to 7

Q.1 (A) For every subquestion 4 alternative answers are given. Choose the correct answer and write the alphabet of it : **(4)**

1) Mean of first five whole numbers is

a. 1 b. 2 c. 3 d. 4

2) Mean of 100 observation is 40. The 9th observation is 30. If this is replaced by 70 keeping all other observations same, find the new mean.

a. 40.6 b. 40.4 c. 40.3 d. 40.7

3) Sum of two number is 35 and their difference is 13. Two equations written in x and y will be

a. $x^2 + y^2 = 35,\ x^2 - y^2 = 13$ b. $x + y = 35,\ x - y = 13$

c. $x^2 + y = 35,\ x^2 - y = 13$ d. $x + y^2 = 35,\ x - y^2 = 13$

4) For different types of investments what is the maximum permissible amount under section 80C of income tax?

a. 1,50,000 rupees b. 2,50,000 rupees

c. 1,00,000 rupees d. 2,00,000 rupees

(B) Solve the following subquestions. **(4)**

1) In the following table, the information is given about the number of families and the siblings in the families less than 14 years of age. Find the mode of the data.

Number of siblings	1	2	3	4
Families	15	25	5	5

2) By using variables x and y form any five linear equations in two variables

3) Find the median of 54, 63, 66, 72, 98, 87, 92.

4) Observe the table and state whether the income tax is to be paid or not for the following persons having taxable F.Y. 2017-13 as given below

Person	Age in year	Taxable Income in Rs.	The tax is to be paid or not
Mr. Shahane	61	4,40,000	

Q.2 (A) Complete and write any two activities from the following : **(4)**

1) Compute the income tax payable by following individuals.

Miss Varsha (Age 26 years) has a taxable income of Rs.2,30,000.

According the taxable income slab up to _____

No _____

∴ Miss Varsha doesn't need to pay _____.

2) Solve the following simultaneous equations. 2x - y = 5 ; 3x + 2y = 11

solution:

2x - y = 5 ... (1)

3x + 2y = 11 ... (2)

By multiplying eq. (1) by 2

∴ _____ ...(3)

By adding eq. (2) and eq. (3)

3x + 2y = 11

4x - 2y = 10

∴ _____

∴ x = 3

By substituting x = 3 in eq. (1)

2x - y = 5

∴ 2(3) - y = 5

∴ _____

∴ - y = 5 - 6

∴ - y = -1

∴ y = _____

3) The following 10 observations are arranged in the ascending order as follows :

2, 3, 5, 9, x + 1, x + 3, 14, 16, 19, 20.

If the median of the data is 11, find the value of x.

Here, n = 10 (Even number)

∴ median is average of middle two numbers.

∴ median is average of (x +1) and (x +3).

$\therefore$ median = _____ = $\frac{2x+4}{2}$ = _____

The median given is 11.

$\therefore$ x + 2 = _____

$\therefore$ x = 11 – 2

$\therefore$ x = _____

(B) Solve any four subquestions from the following : **(8)**

1) Mr. Pandit invested Rs. 3,50,000 in a business and received Rs. 5,50,000 from it after 3 years. If he reinvested the profit earn in shares and bonds in the ratio 7:3. How much amount did he invested in each of the schemes?

2) Complete the following cumulative frequency table :

Class (Monthly income in Rs.)	Frequency (Number of individuals)	More than or equal to type cumulative frequency
1000 – 5000	45	.....
5000 – 10000	19	.....
10000 – 15000	16	.....
15000 – 20000	2	.....
20000 – 25000	5	.....
	Total = 87	

3) If the class mark of a class is 10 and the class width is 6, then find the class.

4) Solve the following simultaneous equations. 2x + y = 5 ; 3x - y = 5

5) Nayana spends 40% of the money that she receives everymonth. and saves Rs. 36,000. How much money does she get monthly?

Q.3 (A) Complete and write any one activity from the following : **(3)**

1) The mean salary of 20 workers in Rs. 10,250. If the salary of office superintendent is added, the mean will increase by Rs. 750. Find the salary of the office superintendent.
The mean salary of 20 workers is Rs. 10,250.

$\therefore$ the total salary of 20 worker is Rs. _____= Rs. _____ ..... (1)

If the office superintendent's salary is included,

The mean becomes Rs._____ = Rs. 11,000
Hence, the total salary of 21 persons = Rs. _____ = Rs. _____ ..... (2)

∴ Superintendent's salary = Rs. (2,31,000 – 2,05,000) ..... [From (1) and (2)]

= Rs._____

Ans. The salary of the office superintendent is _____

2) Compute the income tax payable by following individuals. Mr.Khan is 65 years of age and his taxable income is Rs.4,50,000.

Mr.Khan (Age - 65 years) and taxable Income is Rs.4,50,000
He is senior citizen so we will calculate income tax

∴ accordingly income slab 3,00,001 to 5,00,0000 rupees.

∴ Taxable Income = _____

= _____ rupees

∴ Income tax = _____

= 7500

∴ Education cess is levied on income tax

∴ Education cess = $7500 \times \frac{2}{100}$ = _____

A secondary and higher education cess = $7500 \times \frac{1}{100} = 75$

∴ Total Income tax = _____

= 7500 + 150 + 75
= _____

(B) Attempt any two subquestions from the following : **(6)**

1)
Find the fraction which becomes $\frac{1}{2}$ when the denominator is increased by 4 and is equal to

$\frac{1}{8}$ when the numerator is decreased by 5.

2) Solve Simultaneous equations
$2x = 5y + 4$, $3x - 2y + 16 = 0$

3) In the tables given below, class mark and frequencies are given. Construct the frequency tables taking inclusive and exclusive classes.

Class mark	Frequency
22	6
24	7
26	13
28	4

4) Sumit borrowed a capital of Rs.50,000 to start his food products business. In the first year he suffered a loss of 20%. He invested the remaining capital in a new sweets business and made a profit of 5%. How much was his profit or loss computed on his original capital?

Q.4 Attempt any two subquestions from the following : **(8)**

1) 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 to 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 40 marks or above 40?

(ii) How many students obtained 90 marks or above 90?

(iii) How many students obtained 60 marks or above 60?

(iv) What is the cumulative frequency more than or equal to type of the class 0–10?

2) Mr.Hiralal invested Rs.2,15,000 in a Mutual Fund. He got Rs.3,05,000 after 2 years. Mr.Ramniklal invested Rs.1,40,000 at 8% compound interest for 2 years in a bank. Find out the percent gain of each of them. Whose investment was more profitable?

3) The ratio of incomes of two persons is 9 : 7. The ratio of their expenses is 4 : 3 Every persons saves rupees 200, find their income of each.

Q.5 Attempt any one subquestions from the following : **(3)**

1) Solve Simultaneously equations

$2x + 3y = 9$

$3x + 4y = 5$

2) There are 10 observations arranged in ascending order as given below :

45, 47, 50, 52, x, x+2, 60, 62, 63, 74.

The median of these observation is 53. Find the value of x. Also find the mean and the mode of the data.