

Mathematics Paper – II

CLASS - IX

Final Term 2010-11

(Humanities Group)

Time allowed: 2 hours 20 minutes

Maximum Marks: 45

INSTRUCTIONS:

Please read the following instructions carefully.

1. Check your name and school information. Sign that it is correct

NAME: \_\_\_\_\_ CLASS/SEC: \_\_\_\_\_

Roll No: \_\_\_\_\_ Candidate's sign: \_\_\_\_\_

Invigilator signature \_\_\_\_\_ Checked by \_\_\_\_\_.

2. RUBRIC: There are **ten questions**. Answer **TEN** questions in all

3. Q.2, Q.3, Q.6, Q.8, & Q.10 are given with choices.

4. When answering the questions:  
Read each question carefully.

Use ONLY black ink.

Do not use staples, paper clips, glue or correcting fluid.

DO NOT write out side the answer box.

Complete you answer in the allocated space only.

5. The marks for the questions are shown in brackets ( ).

6. You may use a simple calculator if you wish.

**Percentage, Ratio and proportion:**

Q.1 In a certain college there are 1200 students in which 65% of students are in science group and remaining in Humanities group: **SLO # 1.2.1**

i). Find the number of students in science group in college:

Solution:

(1 mark)

ii). The number of students in Humanities group:

Solution:

(1 mark)

iii). Show the number of students of both groups in ratios form:

Solution: **SLO # 1.3.1**

(1 mark)

**Either**

Q.2 A person died leaving behind his parents and three daughters. The total worth of his assets / property was Rs, 15, 00,000. If his parents got  $\frac{1}{6}$ <sup>th</sup> of the total assets each and each daughter got  $\frac{2}{9}$ <sup>th</sup> of actual assets, then find the amount received by each daughter and parents (Mother / Father) separately:

**SLO # 2.3.1**

(4

marks)

Solution:

**OR**

Q.2 (a) A person has yearly savings Rs 24,000 and his wife has gold ornaments of worth Rs 40000. Find the amount of Zakat which is payable by him at the end of the year: (2 marks)

**SLO # 2.1.2**

Solution:

Q.2 (b) Ahmed paid Rs 750 as Zakat at the rate of 2.5%. Find his total capital: (2 marks)

**SLO # 2.2.2**

Solution:

**Either**  
**Business mathematics:**

Q.3 (a) A shopkeeper marks the price of an article at Rs, 80. Find the selling price of the article if:

i). He gives a discount of 10 %: **SLO # 3.1.2** (3 marks)

Solution:

Q.3 (b) He gives two successive discounts of 5% each: (2 marks)

Solution:

**OR**

Q.3 Following data shows the increase in new costing of furniture:

Item	Original cost	Percentage Increase
Wood	\$ 300	12 %
Paint	\$ 200	7 %
Wages	P-II (Final term) \$ 200	10 %

Find the percentage increase in the cost price of furniture if the original cost was \$ 700:

**SLO # 3.1.2**

(5

marks)

Solution:

Q.4 Cash price of a laptop computer is Rs. 32000 and hire purchase terms were 15 % down payment and 24 equal monthly installments of Rs, 1350: **SLO # 4.5.1**

i). Find the cost of the package deal if it is bought on hire purchase:

(1 mark)

Solution:

ii). The difference between the purchase price and the cash price:

(1 mark)

Solution:

iii). Express the difference in percentage of the cash price:

(1 mark)

Solution:

**Consumer Mathematics:**

Q.5 (a) Three salesmen went to 400 houses to sell a certain brand of water filter costing \$ 26 each. 15 % of houses bought that water filter from them. If the three salesmen sale was recorded in the ratio of 3:4:5, find the commission received by each salesman if the commission is 4 % of total sales:

SLO # 5.3.1

Solution:

(3

marks)

Q.5 (b) After discount of 6% of a bill Rs 282 remains to be paid. Find the amount of original bill:

Solution:

SLO # 5.2.1

(2 marks)

Either

Q.6 (a) Simplify: SLO # 6.2.2  
(marks)

(2)

a).  $\sqrt{\frac{64x^6}{81x^9}}$   
\_\_\_\_\_

b).  $\left(\frac{64}{x^3}\right)^{-\frac{1}{6}}$

Solution:

Solution:

Q.6 (b) Simplify and write answer in scientific notation: SLO # 6.3.1  
 $4.6 \times 10^7$

(2 marks)

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$$2 \times 10^4$$

Solution:

Q.6 (c) Solve:  $(x^2)^3$  divided by  $(x^3)^2$

(1 mark)

Solution:

OR

Q.6 (a) Simplify:  $(16)^{-1/2} \times K = 1$  find the value of K: Verify your answer:

SLO # 6.2.2

(1 mark)

Solution:

Q.6 (b) Find the value of y:  $\log_{64} 8 = y/2$

SLO # 6.4.1

(1 mark)

Solution:

Q.6 (c) Evaluate with the help of logarithm:  $x = 5\sqrt{27} \cdot 2$  SLO # 6.4.3 / 6.4.4

(2 marks)

Solution:

Q.6 (d) Simplify:

$$\sqrt[3]{64} (x^2 y^{-6})^2 \quad \text{SLO\# 6.1.3}$$

(1 mark)

Solution:

**Arithmetic and Geometric Sequence:**

Q.7 (a) Find the 20<sup>th</sup> term of arithmetic sequence whose 3<sup>rd</sup> term is 7 and 8<sup>th</sup> term is 17: SLO # 7.2.2

(2

marks)

Solution:

Q.7 (b) Insert three geometric means between 81 and 16: SLO # 7.5.2

(2

marks)

Solution:

**Sets and Functions:**

**Either**

Q.8 (a) For any two subsets of U, Draw the Venn diagrams: SLO # 8.3.1 (2 marks)

i).  $(A \cup B)^c$

ii).  $A^c \cap B^c$

Solution:

Q.8 (b) If  $R = \{(x, y) \mid x, y \in W \wedge x + y = 7\}$  then write the domain and Range of R SLO # 8.4.1 (3 marks)

Solution:

**OR**

Q.8 (a) With the help of an example define a function:

SLO # 8.5.1

(1 mark)

Solution:

Q. 8 (b) Give an example of one-one and onto function (bijective function):

SLO # 8.3.2

(2 marks)

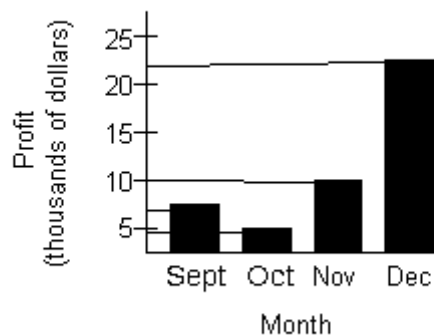
Solution:

Q.8 (c) Write the Associative & Commutative properties of union of three sets: **SLO # 8.2.1**  
(2 marks)

Solution:

### Linear Graphs

Q. 9 (a) The graph below show the profit summary of a factory within last 4 months: **SLO # 9.2.2**  
(2 marks)



i). How much was the profit in the month of September:

Solution:

ii). What is the difference between the profits of October and November:

Solution:

Q.9 (b) Draw the graph of the equation  $2y = 2x + 4$   
marks)

SLO # 9.1.6

(3

Solution:

**Basic Statistics:**

**Either**

Q.10 (a) A survey was conducted among 20 families to find out the number of children they have,  
The table of data collected is as follows. Find the mean SLO # 10.3.1 (2 marks)

Solution:

No. of Children	1	2	3	4
No. of Families	1	11	6	2

<u>frequency</u>	<u>Cumulative frequency</u>
=	=
21	27
=	65
19	84
16	=
$\Sigma f = 100$	

Q.10 (b) State the difference b/w ungrouped & grouped data: **OR** The owner of a shop

kept a record of the sizes of T-shirts sold on a particular day the record showed. Find the Mode:

SLO # 8.4.1

(1 mark)

8, 8, 10, 8, 12, 10, 8, 8, 12

Solution:

Q.10 (c) Complete the following table:

SLO # 10.2.1

(3 marks)

Solution:

**OR**

Q. 10 (a) Draw histogram for the following distribution: SLO # 10.1.3

(4 marks)

<b>Class Interval</b>	2 -3	4-5	6-7	8-9	10-11	Total
<b>frequency</b>	1	3	5	4	2	15

Solution:

Q.10 (b) Calculate the Standard deviation of the following data: **SLO # 10.4.1** (2 marks)

<b>Weight of the medicines in gm (x)</b>	54	45	57	47	60	52	51	40	44
<b>X<sup>2</sup></b>	2916	2025	3249	2209	3600	2704	2601	1600	1936

Solution: