

DEPARTMENTAL EXAMINATION FOR TEHSILDARS/ NAIB  
TEHSILDARS OF HIMACHAL PRADESH, APRIL, 2012

PAPER: <sup>2</sup> ARITHMETIC AND PATWARIS MENSURATION

(Paper-2)

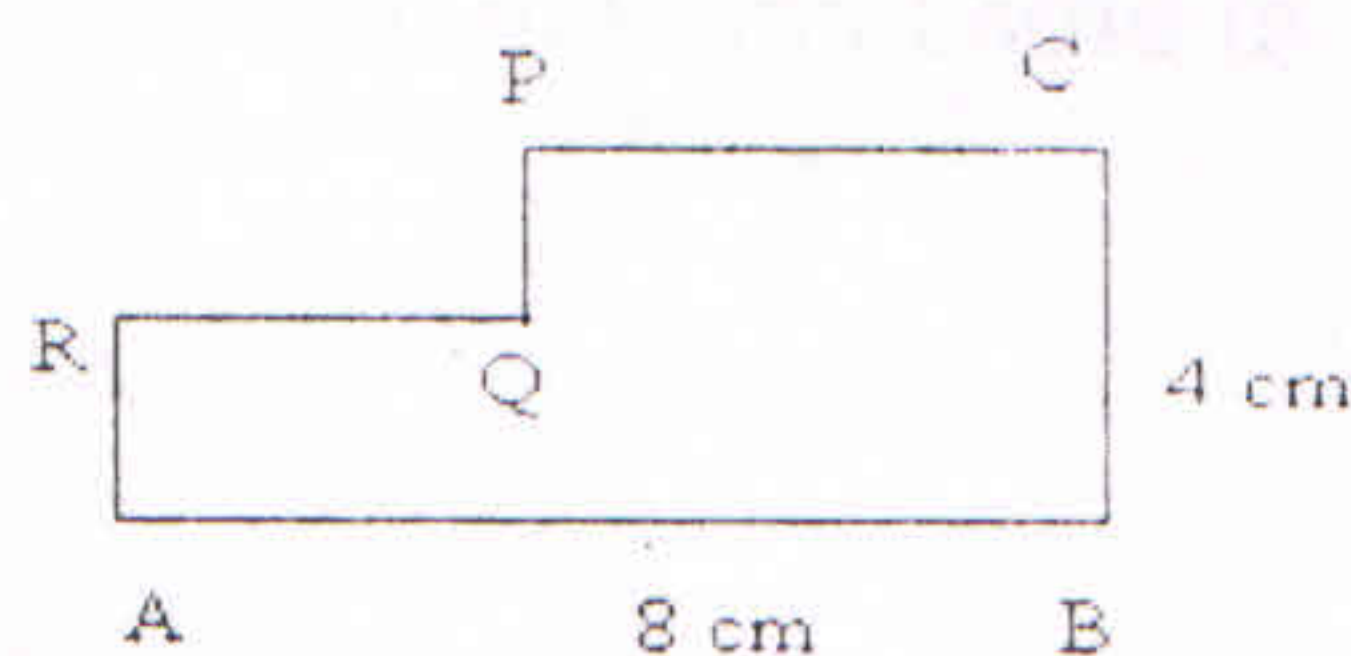
TIME ALLOWED: 3 HOURS

MAXIMUM MARKS: 100

- Note
1. The candidate may answer the question in English or Hindi.
  2. Attempt any five questions, at least two questions from each part.

Part I (Arithmetic)

1. (i) Find the number of bricks each measuring 24 cm x 12 cm x 8 cm required to construct a wall 24 m long, 8 m high and 60 cm thick, if 10% the wall is filled with mortar.
- (ii) One diagonal of a parallelogram is 70 cm and the perpendicular distance of this diagonal from either of the outlying vertices is 27 cm. Find the area of a parallelogram.
- (iii) A rectangle of certain dimension is chopped off from one of a corner of a larger rectangle as shown. AB=8 cm and BC=4 cm. Find the perimeter of the figure ABCPQRA (in cm).



2. (i) A tank 4 m long, 2.5 m wide and 1.5 m deep is dug in a field 31 m long and 10 m wide. If the earth dug out is evenly spread out over the field. Find the rise in the level of field.

- (ii) Simplify

$$b - [b - (a + b) - \{b - (b - a - b)\}] + 2a$$



(iii) If  $x/y = 6/5$ . Find the value of  $x^2 + y^2 / x^2 - y^2$

3.(i) In an election between two candidates, 75% of the voters cast their votes. Out of which 2% of the votes were declared invalid. A candidate got 9261 votes which were 75% of the total valid votes. Find the total number voters enrolled in that election.

(ii) When the price of a product was decreased by 10%, the number sold increased by 30%. What was the effect on total revenue?

(iii) Find the compound Interest on ` 10000 in 2 years at 4% per annum, the interest being compounded half yearly.

4.(i) The difference between the compound interest and simple interest accrued on an amount of Rs. 18000 in 2 years was Rs. 405 what is the rate of interest per annum ?

(ii) A number is as much greater than 36 as is less than 86 find the number.

(iii) Find the length of the longest pole that can be placed in a room 12m long, 8 m broad and 9 m high.

## Part II (Mensuration)

1. (i) What are the main objectives of conducting settlement operations? Do these objectives have relevance in the present context to continue the operations?

(ii) What are topographical and cadastral surveys? What system is usually adopted in Himachal Pradesh for mapping?

(iii) Discuss Plane table surveying being used for mapping during settlement operations.



2. (i) What is the record of rights and discuss the significance of shajra kishtwar with the patwari for day to day operations.
- (ii) How tatima is carved out of regular settlement khasra number on the spot. Describe the process and precautions to be taken.
- (iii) Describe the process of mapping when a river or some obstacle like building comes in between the plots to be measured during settlement.
3. (i) How the Zarib is corrected when it is either long or short?
- (ii) How the Zarib andazi be done of a line?
- (iii) Elaborate the process of demarcation of a given field quoting relevant instructions.
4. Describe
  - (i) Agricultural year.
  - (ii) Holding.
  - (iii) Land owner and owner of land.
  - (iv) Fared Baachh.
  - (v) Chandabandi.
  - (vi) Naksha Tafawat.
  - (vii) Field Book.
  - (viii) Base Line.
  - (ix) Estate.
  - (x) Takao