

Pabna Cadet College
Fortnightly Examination - 2021
Second Term Phase One
Subject: Mathematics
Class: VIII

Time: 40 minutes

Full Marks: 20

Answer all the question.

1. **Length, width, and depth of a pond are 32m, 20m, and 3m, respectively. A machine is pumping water out of the pond at the rate 0.1 m^3 per second.**

- a. What is the assumed shape of the pond from the given stem? Find the volume of the pond. 2
- b. How much time is required to drain the pond completely? 4
- c. What would the answer of (b) be, if the pond were cylindrical in shape, with diameter equal to length in stem? **(You can use the formula in this link: [click to see](#))** 4

2. **Universal set $U = \{1, 2, 3, 4, 5, 6, 7\}$ and its three subsets are-**

$A = \{X \in N : x < 7 \text{ and } x \text{ is an odd number}\}$

$B = \{X \in N : x < 7 \text{ and } x \text{ is an even number}\}$

$C = \{X \in N : x \leq 7 \text{ and } x \text{ is a prime number}\}$

- a. Express the sets A and B in set-builder form 2
- b. Find $(A \cup B) \cap (A \cup C)$ 4
- c. Think of a set used in real world and write it in tabular and set-builder form. 4

—Good Luck—