Riviera International Academy

Assignment-2077

(Ashad 12, 2077, Friday)

Class: Nine   Date:- _____   Name:- _____

Subject – English
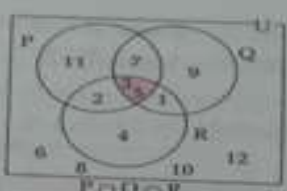
E books
The Foolish Fish
Pg 30 Read the poem and answers the following questions.
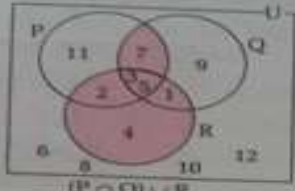
Subject- Mathematics

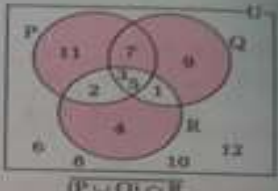Source: Photo of exercise has given below.

b) $P \cap Q = \{3, 5, 7\}$
     $P \cap Q \cap R = \{3, 5\}$

c) $P \cap Q = \{3, 5, 7\}$
     $(P \cap Q) \cup R = \{1, 2, 3, 4, 5, 7\}$

d) $P \cup Q = \{1, 2, 3, 5, 7, 9, 11\}$
     $(P \cup Q) \cap R = \{1, 2, 3, 5\}$
     $(P \cup Q) \cap R = \{4, 6, 7, 8, 9, 10, 11, 12\}$
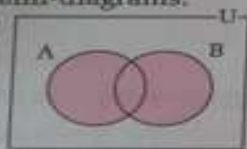
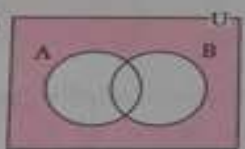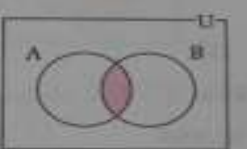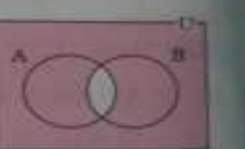### EXERCISE 1.1

General section

1. Let A and B are the subsets of a universal set U. Define the following set operations in set-builder forms.
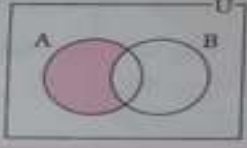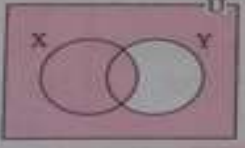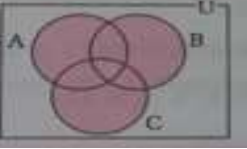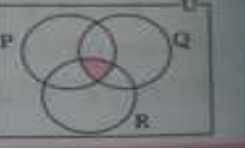
a) $A - B$ b) $A \cap B$ c) $\overline{B - A}$ d) $A \cup B$ e) $\overline{A - B}$
f) $\overline{A \cup B}$ g) $B - A$ h) $\overline{A}$ i) B j) $\overline{A \cap B}$

2. Let P and Q are the subsets of a universal set U. Write the set operations defined by the following set-builder forms.

a) $\{x : x \in Q, \text{ but } x \notin P\}$
b) $\{x : x \in U, \text{ but } x \notin Q\}$ c) $\{x : x \in P \text{ or } x \in Q\}$
d) $\{x : x \in U, \text{ but } x \notin P \text{ or } x \notin Q\}$ e) $\{x : x \in P, \text{ but } x \notin Q\}$ f) $\{x : x \in P \text{ and } x \in Q\}$
g) $\{x : x \in U, \text{ but } x \notin P - Q\}$ h) $\{x : x \in U, \text{ but } x \notin P \text{ and } x \notin Q\}$
i) $\{x : x \in U, \text{ but } x \notin P\}$

3. Write the set operations represented by shaded regions shown in the following Venn-diagrams.

4. a) A and B are the subsets of the universal set U. From the given diagrams, list the elements of the following set operations.

(i) $A \cup B$ and $\overline{A \cup B}$ (ii) $A \cap B$ and $\overline{A \cap B}$

(iii) $A - B$ and $\overline{A - B}$ (iv) $B - A$ and $\overline{B - A}$

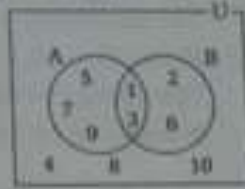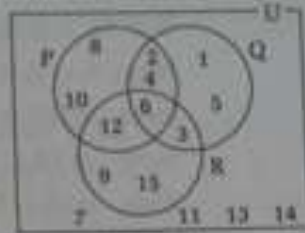**b)** P, Q and R are the subsets of the universal set U. List the elements of the following set operations from the given diagram.

(i) $P \cup Q \cup R$ (ii) $P \cap Q \cap R$ (iii) $\overline{P \cup Q \cup R}$

(iv) $\overline{P \cap Q \cap R}$ (v) $(P \cup Q) \cap R$ (vi) $(P \cap Q) \cup R$

5. a) Assuming that A and B are two overlapping sets, draw two separate Venn-diagrams to verify $A \cup B = B \cup (A - B)$ by shading.

b) Let P and Q are two overlapping sets. Draw two separate Venn-diagrams of $P \cup (Q - P)$ and $P \cup Q$ and verify $P \cup (Q - P) = P \cup Q$ by shading.

Creative section - A

6. P and Q are the subsets of the universal set U. If $U = \{1, 2, 3, \ldots 10\}$, $P = \{1, 2, 3, 4, 5\}$ and $Q = \{2, 4, 6, 8\}$, list the elements of the following set operations and represent them by shading in Venn-diagrams.

a) $P \cup Q$ and $\overline{P \cup Q}$ b) $P \cap Q$ and $\overline{P \cap Q}$ c) $P - Q$ and $\overline{P - Q}$

d) $Q - P$ and $\overline{Q - P}$ e) $\overline{P} \cup Q$ f) $\overline{P} \cap Q$

7. $A = \{1, 3, 5, 7, 9, 11\}$, $B = \{1, 2, 3, 4, 5, 6, 7\}$ and $C = \{3, 6, 9, 12, 15\}$ are the subsets of the universal set $U = \{1, 2, 3, \ldots 15\}$. List the elements of the following set operations and illustrate them in Venn-diagrams by shading.

a) $A \cup B \cup C$ and $\overline{A \cup B \cup C}$ b) $A \cap B \cap C$ and $\overline{A \cap B \cap C}$

c) $(A \cup B) \cap C$ and $\overline{(A \cup B)} \cap C$ d) $A \cap (B \cup C)$ and $\overline{A \cap (B \cup C)}$

e) $(A - B) \cup C$ and $\overline{(A - B)} \cup C$ f) $A \cup (B - C)$ and $\overline{A \cup (B - C)}$

Creative section - B

8. If $U = \{1, 2, 3, \ldots 12\}$, $P = \{1, 2, 3, 4, 5, 6\}$, $Q = \{2, 4, 6, 8\}$ and $R = \{3, 6, 9, 12\}$, verify the following operations.

a) $P \cup (Q \cap R) = (P \cup Q) \cap (P \cup R)$ b) $P \cap (Q \cup R) = (P \cap Q) \cup (P \cap R)$

c) $\overline{P \cup Q} = \overline{P} \cap \overline{Q}$ d) $\overline{P \cap Q \cap R} = \overline{P} \cup \overline{Q} \cup \overline{R}$

9. a) If $A = \{2, 4, 6, 8, 10\}$ and $B = \{1, 3, 5, 7, 9\}$ are two disjoint sets verify that $n(A \cup B) = n(A) + n(B)$.

b) If $A = \{2, 3, 5, 7\}$ and $B = \{1, 2, 3, 4, 6, 12\}$ are two overlapping sets, show that $n(A \cup B) = n(A) + n(B) - n(A \cap B)$.

Work: complete all 1.1

Do your work neatly

विषय – नेपाली

शब्द भण्डारमा (१) पर्यायवाची शब्द (२)विपरीतार्थक शब्द (३) अनेकार्थक शब्द (४) श्रुतिसम भिन्नार्थक शब्दहरू कक्षा ८ को वा कक्षा ९ को व्याकरणबाट अभ्यास गर्नुहोस् । उदाहरण:

(१) 'आदि' शब्दको पर्यायवाची शब्द - - - - हो । (अन्त्य, सुरु, मध्य)

(२) 'आस्तिक' शब्दको विपरीतार्थक शब्द - - - - हो । (नास्तिक, पथिक, अत्याधिक)

(३) 'कर' - - - - शब्द हो । (अनेकार्थक, पर्यायवाची, श्रुतिसम भिन्नार्थक)

(४) तिर - तीर - - - शब्द हुन् । (पर्यायवाची, अनेकार्थी, श्रुतिसम भिन्नार्थी)
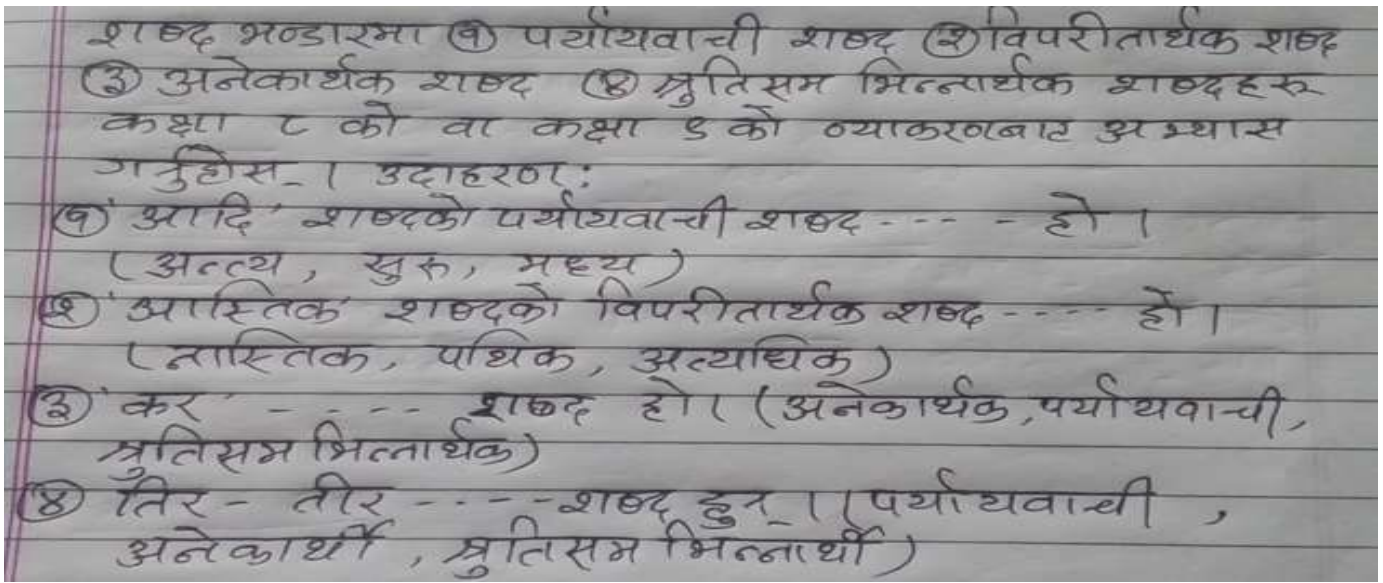
Subject- HPE

1) Read the text below and do the following activities:

Pollution is the degradation of natural environment by external substances introduced directly or indirectly. Human health, ecosystem quality and aquatic and terrestrial biodiversity may be affected and altered permanently by pollution.

Pollution occurs when ecosystems cannot get rid of substances introduced into the environment. The critical threshold of its ability to naturally eliminate substances is compromised and the balance of the ecosystem is broken.

The sources of pollution are numerous. The identification of these different pollutants and their effects on ecosystems is complex. They can come from natural disasters or the result of human activity, such as oil spills, chemical spills, nuclear accidents ... These can have terrible consequences on people and the planet where they live: destruction of the biodiversity, increased mortality of the human and animal species, destruction of natural habitat, damage caused to the quality of soil, water and air...

Preventing pollution and protecting the environment necessitate the application of the principles of sustainable development. we have to consider to satisfy the needs of today without compromising the ability of future generations to meet their needs. This means that we should remedy existing pollution, but also anticipate and prevent future pollution sources in order to protect the environment and public health. Any environmental damage must be punishable by law, and polluters should pay compensation for the damage caused to the environment.

Comprehension
1) The damage caused by pollution might be irreversible:
   a) True
   b) False
2) The ecosystem

    a. can always cope with pollutants

    b. may not always be able to cope with pollution.

3)   Pollution

    a) is always caused by humans.

    b) may sometimes be caused by natural disasters.

4)   An ideal solution to prevent pollution would be to

  a) refrain the development of some countries.

  b) continue developmental projects.

  c) take into consideration the future generations need to live in a healthy environment.

5) Write your understanding of the text in forty words.

The End.