

Assignment 7th DOI 19 Nov 2015 Date of Submission – Mth 21 Nov 2015; Sc 23 Nov
Mth Rational Numbers

1. Simplify the expression by combining the like terms: $7x^3 - 3x^2y + xy^2 + x^2y - y^3$
2 The side length of the top of square table is x . The expression for perimeter is: (a) $4 + x$ (b) $2x$ (c) $4x$ (d) $8x$
3 The number of scarfs of length half metre that can be made from y metres of cloth is : (a) $2y$ (b) $\frac{y}{2}$ (c) $y + 2$ (d) $y + \frac{1}{2}$
4 $123x^2y - 138x^2y$ is a like term of : (a) $10xy$ (b) $-15xy$ (c) $-15xy^2$ (d) $10x^2y$
5. In questions a to e, fill in the blanks to make the statements true. a. Sum or difference of two like terms is _____. b. Number of terms in a monomial is c. $x + y + z$ is an expression which is neither monomial nor _____. d. $-a - b - c$ is same as $-a - (\quad)$.
6. In questions a to f, state whether the statements given are True or False. a. $(3a - b + 3) - (a + b)$ is a binomial. b. A trinomial can be a polynomial. c. A polynomial with more than two terms is a trinomial. d. Sum of x and y is $x + y$. e. A trinomial has exactly three terms. f. In like terms, variables and their powers are the same.
7. Write the following statements in the form of algebraic expressions and write whether it is monomial, binomial or trinomial. (a) x is multiplied by itself and then added to the product of x and y . (b) Three times of p and two times of q are multiplied and then subtracted from r . (c) Product of p , twice of q and thrice of r . (d) Sum of the products of a and b , b and c and c and a . (e) Perimeter of an equilateral triangle of side x . (f) Perimeter of a rectangle with length p and breadth q . (g) Area of a triangle with base m and height n . (h) Area of a square with side x . (i) Cube of s subtracted from cube of t . (j) Quotient of x and 15 multiplied by x . (k) The sum of square of x and cube of z . (l) Two times q subtracted from cube of q .

Sc Climate and adaptation

1. "A fish dies when taken out of water whereas a wall lizard will die if kept under water." Mention the term used to describe such abilities that allow fish and lizard to survive in their respective habitats.
2. Give one example of an animal that can live both in water and on land.
3. Name two animals each that live in Polar region and Tropical rain forests.
4. Write two common adaptive features of a polar bear which help in keeping it warm.
5. Mention two adaptive features of penguin that help it in swimming.
6. Why is it difficult to predict the weather of a place while it is easy to predict its climate?
7. Differentiate between:
 (i) Weather and climate (ii) Humidity and rainfall (iii) Climates of polar region and tropical rain forest
 (iv) Maximum and minimum temperatures of the day
8. Why is it difficult to predict the weather of a place while it is easy to predict its climate?

Symposium Climate and adaptation-

Speaker1. Good morning friends. We welcome you all for our symposium – Climate and adaptation. The topic will be covered byand Weather is the atmospheric condition over a particular area over a short period of time. Weather of a place depends upon the variables such as temperature, moisture, wind, sun, cloud and atmospheric pressure. These factors are called the elements of the weather. Depending upon these factors weather can be sunny or cloudy, rainy or windy, hot or cold, humid or dry. Weather is

unpredictable too. It changes in a short span of time. It may be bright and sunny in the morning and become cloudy in the afternoon. Nowwill discuss about Climate.

Speaker 2. Climate refers to the weather conditions prevalent over a large area for a long period of time (many years). To be more specific, the average weather pattern of a certain place over a long time, say 25 years, is called the climate. We very well know that the climate of Srinagar is cold, that of Chennai is hot. In some places like desert the climate is extreme hot in summers and cold in winters and there is hardly any rainfall. Places like the polar regions, are cold throughout the year, while places near the equator have hot and wet conditions all the year round. So we see that the climate of various places on earth varies a great deal. Nowwill discuss how sun is the basic source of energy on earth and basic cause behind climatic changes.

Speaker 3. Sun is a ball of hot gases. The sun provides an unfailing source of light and energy to earth. The sun's heat warms the surface of the earth, which would have been otherwise cold and lifeless. Thus warmed earth releases a portion of its heat which is trapped by atmospheric gases like carbon dioxide. This further raises the surface temperature to a comfortable 15°C. In this way, the sun's radiation and the earth's blanket of gases sustain the mean global temperature at a level supportive of life. Sunlight powers photosynthesis in plants and all animals obtain food from plants. The sun also provides energy for the atmospheric and oceanic circulations that profoundly affect all living things. Thus we can say that the sun is the basic source of energy that causes weather to change and life to exist on earth. Nowwill discuss various factors which influence the climate like Latitude, Height above sea level, Distance from the sea, Wind and humidity

Speaker 4. Latitude-The location of a place is determined by its angle latitude. The places at equator and poles have latitudes of 0° and 90° respectively. The climate of a place depends upon its location on the earth. The places on the earth which are nearer to the equator are hot because the sun's rays fall vertically. The places in polar regions are cold because sun's rays fall at a slanting angle. It happens because the axis about which the earth rotates is tilted. It is this tilt of the axis that causes seasons on the earth like spring, summer, autumn and winter. In summer the sun's rays shine more directly on a part of the earth's surface. Hence the days are hot and long. Nowwill discuss a few other factors.

Speaker 5. Height above sea level: Srinagar is colder than Delhi. The reason is Srinagar is at a higher altitude. This is why hill stations are visited by people during the summer.

Distance from the sea: The places near the sea receive cool breezes. This makes the climate pleasant and equable. It is neither too hot nor too cold in these places. Delhi, which is away from the sea has extreme climate and Mumbai which is near the sea has equable climate. In places away from the sea, summers are very hot and winters are very cold. This kind of climate is also called desert type of climate.

Wind: Wind is caused by the uneven heating of the atmosphere. Hot air rises yielding place to cooler air from the surrounding places. This causes wind to blow making a place cool.

Humidity: At times, especially during summer, we sweat a lot and feel uncomfortable. This happens due to humidity. Humidity is the amount of water vapour contained in a given volume of air. Humidity also causes rain. It is measured in per cent.

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