

**Assignment 10th DOI 29 Apr 2016. Date of Submission Maths : 03 May and Sc 04 May**

Q1-4 carry 1 mark each, Q5-10 carry 2 marks each, Q11 carries 3 marks (each part) and Q12-16 carry 5 marks each.

**10 Maths - Polynomials****Choose the correct answer from the given four options**

- The number of polynomials having zeroes as  $-2$  and  $5$  is (A)1 (B)2 (C)3 (D) more than 3
- If one of the zeroes of the cubic polynomial  $x^3 + ax^2 + bx + c$  is  $-1$ , then the product of the other two zeroes is (A)  $b - a + 1$  (B)  $b - a - 1$  (C)  $a - b + 1$  (D)  $a - b - 1$
- The zeroes of the quadratic polynomial  $x^2 + 99x + 127$  are (A) both positive (B) both negative (C) one positive and one negative (D) both equal
- The zeroes of the quadratic polynomial  $x^2 + kx + k$ ,  $k \neq 0$ , (A) cannot both be positive (B) cannot both be negative (C) are always unequal (D) are always equal.

**Answer the following and justify:**

- If on division of a polynomial  $p(x)$  by a polynomial  $g(x)$ , the quotient is zero, what is the relation between the degrees of  $p(x)$  and  $g(x)$ ?
- If on division of a non-zero polynomial  $p(x)$  by a polynomial  $g(x)$ , the remainder is zero, what is the relation between the degrees of  $p(x)$  and  $g(x)$ ?

**Are the following statements 'True' or 'False'? Justify your answers.**

- If the zeroes of a quadratic polynomial  $ax^2 + bx + c$  are both positive, then  $a$ ,  $b$  and  $c$  all have the same sign.
- If the graph of a polynomial intersects the  $x$ -axis at only one point, it cannot be a quadratic polynomial.
- If the graph of a polynomial intersects the  $x$ -axis at exactly two points, it need not be a quadratic polynomial.
- If two of the zeroes of a cubic polynomial are zero, then it does not have linear and constant terms.

11. Find the zeroes of the following polynomials by factorisation method and verify the relations between the zeroes and the coefficients of the polynomials:

- |   |                               |                                     |
|---|-------------------------------|-------------------------------------|
| a. $4x^2 - 3x - 1$                      | b. $3x^2 + 4x - 4$            | c. $5t^2 + 12t + 7$                 |
| d. $t^3 - 2t^2 - 15t$                   | e. $2x^2 + \frac{7}{2}x + 34$ | f. $4x^2 + 5\sqrt{2}x - 3$          |
| g. $2s^2 - (1 + 2\sqrt{2})s + \sqrt{2}$ | h. $v^2 + 4\sqrt{3}v - 15$    | i. $y^2 + \frac{3}{2}\sqrt{5}y - 5$ |

12. Find a quadratic polynomial, the sum and product of whose zeroes are  $\sqrt{2}$  and  $-\frac{3}{2}$  respectively. Also find its zeroes.

13. If the remainder on division of  $x^3 + 2x^2 + kx + 3$  by  $x - 3$  is 21, find the quotient and the value of  $k$ . Hence, find the zeroes of the cubic polynomial  $x^3 + 2x^2 + kx - 18$ .

14. Find  $k$  so that  $x^2 + 2x + k$  is a factor of  $2x^4 + x^3 - 14x^2 + 5x + 6$ . Also find all the zeroes of the two polynomials.

15. Given that  $x - \sqrt{5}$  is a factor of the cubic polynomial  $x^3 - 3\sqrt{5}x^2 + 13x - 3\sqrt{5}$ , find all the zeroes of the polynomial.

16. For which values of  $a$  and  $b$ , are the zeroes of  $q(x) = x^3 + 2x^2 + a$  also the zeroes of the polynomial  $p(x) = x^5 - x^4 - 4x^3 + 3x^2 + 3x + b$ ? Which zeroes of  $p(x)$  are not the zeroes of  $q(x)$ ?

**10th Sc Life Processes**

1. MCQs in the format Quiz and e-test as available in the school (Projection System)

**Short answer questions**

- |  |   |
|--|---|
| 2. Name the following  | 3. "All plants give out oxygen during day and carbon dioxide during night". Do you agree with this statement? Give reason.                                      |
| (a) The process in plants that links light energy with chemical energy | 4. How do the guard cells regulate opening and closing of stomatal pores?   |
| (b) Organisms that can prepare their own food                          | 5. Two green plants are kept separately in oxygen free containers, one in the dark and the other in continuous light. Which one will live longer? Give reasons. |
| (c) The cell organelle where photosynthesis occurs                     |   |
| (d) Cells that surround a stomatal pore                                |   |
| (e) Organisms that cannot prepare their own food                       |   |

6. Why do fishes die when taken out of water?
7. Differentiate between an autotroph and a heterotroph.
8. Is 'nutrition' a necessity for an organism? Discuss.
9. What would happen if green plants disappear from earth?
10. Differentiate between an artery and a vein.
11. What are the adaptations of leaf for photosynthesis?
12. What will happen if mucus is not secreted by the gastric glands?

13. What is the significance of emulsification of fats?
14. Why does absorption of digested food occur mainly in the small intestine?
15. Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?
16. Why is blood circulation in human heart called double circulation?
17. What is the advantage of having four chambered heart?

#### **Long answer questions**

18. How do carbohydrates, proteins and fats get digested in human beings?
19. Explain the process of breathing in man.
20. Describe the process of urine formation in kidneys.

21. Draw the diagram of alimentary canal of man and label the following parts.  
Mouth, Oesophagus, Stomach, Intestine
22. Explain the mechanism of photosynthesis.

#### **Symposium 10 SS Work, Life and Leisure**

**Speaker 1.** Good morning friends. We welcome you for our symposium - Work, life and leisure. The symposium will be conducted by ....., ....., ..... and ..... Many decades after the beginning of the industrial revolution, most Western countries were largely rural. In the early industrial cities of Britain, most of the people were migrants from rural areas. By 1750, one out of every nine persons of England and Wales lived in London. It was a big city with a population of about 675,000. Between 1810 and 1880, the population of London multiplied fourfold; increasing from 1 million to about 4 million. The city of London was of great attraction for the migrant population. During the First World War (1914 – 1918), manufacturing of motor cars and electrical goods began in London. This led to dramatic increase of jobs in the city. Now .....will discuss about marginal groups.

**Speaker2.** Thank You .....The city of London was flourishing with prosperity. As the city grew in size, crime also flourished. As per estimates, about 20,000 criminals were living in London in the 1870s. Many people who failed to find gainful employment often resorted to petty crimes. Sometimes, the crime provided a better source of earning than doing some of the low paying jobs in the small factories. Many women, who were employed in the factories during war years, lost their jobs and were forced to work within households. Many of them tried to earn by renting their homes or by other activities; like tailoring, washing or matchbox making. Many poor children were forced into low-paid work, often by their parents. Government passed Compulsory Elementary Education Act in 1870. Factory acts were passed in 1902. By virtue of these acts the children were kept out of industrial work. Now .....will discuss about the problem of housing which arose due to flow of migrants in the city of London in the search of employment.

**Speaker3.** Thank You .....As more and more people were migrating to the cities, it led to the problem of living. Housing facilities were not provided by the employers. The tenements provided by private landowners were cheap but unsafe. According to a survey done by Charles Booth (a Liverpool shipowner) in 1887 in London, about 1 million people which was about 20% of total population were very poor. Their life expectancy was 29 years as compared to 55 years among the gentry and the middle class. The survey concluded that London needed to rebuild at least 400,000 rooms to house its poor citizens. The one-room houses occupied by the poor were a serious threat to public health. These rooms were poorly ventilated and there was no arrangement for sanitation. To improve the conditions of poor, workers' mass housing schemes were planned. Now .....will discuss about the steps taken by various agencies.

**Speaker4.** Thank You.....Various steps were taken to clean up the city of London. Colonies were decongested. Open spaces with greenery were created. Large blocks of apartments were built. Rent control was introduced to reduce the burden on people. The city also witnessed the development of new forms of mass transport. The London underground railway was built. The first section of the Underground opened in 1863 between Paddington and Farringdon. The train service was expanded by 1880 to carry 40 million passengers a year. Initially the response of public towards the Underground was not good. But later on the Underground proved to be a huge success. Between the two World Wars, the British state accepted the responsibility for housing the working class. Local authorities built about one million houses. These were single-family cottages. Now .....will discuss about Social Change in the City of London.

**Speaker5.** Thank You.....The development and improved conditions of living brought in a change in the social dynamics. The family became smaller and individualism increased. The institution of marriage tended to break down among the working class. Women of the upper middle class in Britain faced increasing levels of isolation. Many social reformers felt a need to save the family by pushing the women back into the home. A number of political movements started. But most of these were participated by males only. It took some time before women could actively participate in these movements. The positive aspect of these changes was that the family became the focus of the new market. People started thinking about leisure and consumption. For wealthy British, there had been a tradition of 'London Season'. For the elite families, many cultural events were organized. People from the working classes met in pubs. The pub was the centre of exchanging news and views for them. Libraries, art galleries and museums were established in the nineteenth century to provide people with a sense of history and pride in the British achievements. The trend of spending holidays on beaches increased among the working classes. With this we come to an end of our symposium. In next presentation we will discuss about the growth of Bombay, a city in colonial India.

**Note for subject teachers, students and parents** - The Quiz and e-test mentioned below are available on the school E-board (Smart class). The same is also available on the following link.

2. Quiz- <http://www.learnmyway.in> 10(04) DOI 26 Apr 2016.Q.Sc. Life Processes;

3. Electronic test - <http://www.learnmyway.in> 10(04) DOI 26 Apr 2016.ET.Sc. Life Processes;

**Mobile version of e-test is also available online.**

Path to find the above mentioned contents on the internet / smart phone (mobile) [www.learnmyway.com](http://www.learnmyway.com) (Click on E curriculum) Click on your school folder (MSS Patiala) Log on with the password. Please contact school authorities (Class teacher/Subject teacher) in case password is not known / communicated).

Help line : email [Rajinder\\_k\\_sharma@yahoo.com](mailto:Rajinder_k_sharma@yahoo.com) Skype : [rajinder.sharma1958](https://www.skype.com/people/rajinder.sharma1958) Mob : 9357388588