Assignment DOI 29 Apr 2016 Date of submission Maths 03 May Sc 04 May

9 Maths Polynomials

MCQs

1. $\sqrt{2}$ is a polynomial of degree

(a) 2 (b) 0 (c) 1 (d) $\frac{1}{2}$

2. Degree of the zero polynomial is

(a) 0 (b)1 (c)Any natural number (d) Not defined

3. The value of the polynomial $5x - 4x^2 + 3$, when $x = -1$ is (a) – 6 (b) 6 (c) 2 (d) –2

4.One of the factors of $(25x^2 - 1) + (1 + 5x)^2$ is

(a) 5 + x (b) 5 – x (c) 5x – 1(d) 10x

5.If $a + b + c = 0$, then $a^3 + b^3 + c^3$ is equal to

(a) 0 (b) abc (c) 3abc (d) 2abc

Short Answer Questions with Reasoning

6.Which of the following expressions are polynomials? Justify your answer:

(i) 8 (ii) $\sqrt{3}x^2 - 2x$ (iii) $1 - \sqrt{5}x$

(iv) $\frac{(x-2)(x-4)}{x}$ (v) $\frac{1}{x+1}$ (vi) $\frac{1}{2x}$

7.Write whether the following statements are True or False. Justify your answer.

(i) A binomial can have atmost two terms

(ii) Every polynomial is a binomial

(iii) A binomial may have degree 5

(iv) Zero of a polynomial is always 0

(v) A polynomial cannot have more than one zero

(vi) The degree of the sum of two polynomials each of degree 5 is always 5.

Short answer questions

8. Check whether p(x) is a multiple of g(x) or not, where $p(x) = x^3 - x + 1$, $g(x) = 2 - 3x$

9. Check whether g(x) is a factor of p(x) or not, where

$p(x) = 8x^3 - 6x^2 - 4x + 3$, $g(x) = \frac{x}{3} - \frac{1}{4}$

10. Find the value of a, if $x - a$ is a factor of $x^3 - ax^2 + 2x + a - 1$.

11. Without actually calculating the cubes, find the value of $48^3 - 30^3 - 18^3$.

12. Without finding the cubes, factorise $(x - y)^3 + (y - z)^3 + (z - x)^3$

13. For the polynomial $\frac{x^3 + 2x + 1}{5} - \frac{7}{2}x^2 - x^6$

write (i) the degree of the polynomial (ii) the coefficient of x^3 (iii) the coefficient of x^6 (iv) the constant term

14. Find the value of the polynomial $3x^3 - 4x^2 + 7x - 5$, when $x = 3$ and also when$x = -3$

15. Find the zeroes of the polynomial in each of the following : (i) $p(x) = x - 4$ (ii) $g(x) = 3 - 6x$

16. By Remainder Theorem find the remainder, when p(x) is divided by g(x), where

(i) $p(x) = x^3 - 2x^2 - 4x - 1$, $g(x) = x + 1$

(ii) $p(x) = x^3 - 3x^2 + 4x + 50$, $g(x) = x - 3$

(iii) $p(x) = 4x^3 - 12x^2 + 14x - 3$, $g(x) = 2x - 1$

(iv) $p(x) = x^3 - 6x^2 + 2x - 4$, $g(x) = 1 - \frac{3}{2}x$

Long Answer Questions

17. Factorise the following: (i) $4x^2 + 20x + 25$ (ii) $9y^2 - 66yz + 121z^2$

18. If $x + y = 12$ and $xy = 27$, find the value of $x^3 + y^3$.

9 Sc Force and laws of Motion

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

(Q 1-10 : 1 mark each; 11-18: 2 marks each; 19-22: 4 marks each;)

1. Define momentum.
2. State first law of motion.
3. What is inertia?
4. Can action and reaction balance each other?
5. How does one climb up a rope?
6. Why cannot we walk in space?
7. What does rate of change of momentum represent?
8. Why do we continuously paddle to keep the cycle moving?
9. Why does a scooter tend to skid while executing a sharp turn?
10. Which one would have more inertia : 10 kg mass & 5 kg mass?
11. There are three solids made up of aluminium, steel and wood, of the sameshape and same volume. Which of them would have highest inertia?
12. Explain the functioning of shockers in cars.
13. How much force is needed to pull an object of mass 40 kg in vertically upward direction with acceleration of 2.2 m/s^2?
14. Why does a fan keep moving for sometime when switched off?
15. Two identical bullets are fired one by a light rifle and another by a heavy rifle with the same force. Which rifle will hurt the shoulder more and why?
16 . A horse continues to apply a force in order to move a cart with a constant speed. Explain why?
17. What do you mean by conservation of momentum?
18. Inflated balloon lying on the surface of a floor moves forward when pricked with a pin. Why?

19. Derive the unit of force using the second law of motion. A force of 5 N produces an acceleration of 8 m s^{-2} on a mass m1 and an acceleration of 24 m s^{-2} on a mass m2. What acceleration would the same force provide if both the masses are tied together?
20.What is momentum? Write its SI unit. Interpret force in terms of momentum. Represent the following graphically (a) momentum versus velocity when mass is fixed. (b) momentum versus mass when velocity is constant.
21. An iron sphere of mass 10 kg is dropped from a height of 80 cm, if 'g' = 10 m/s^2. Calculate the momentum transferred to the ground by the body.
22. What would be the force required to stop a car of mass 1000 kg and a loaded truck of mass 10,000 kg in 2 seconds each moving with velocity 5 m / s.

9 Sym Size and location

Speaker1. Good morning friends. We welcome you all for our symposium India size and location. The participants are....., ..., ..., ... and ..... India is a vast country. It lies entirely in the Northern Hemispheres. India's latitudinal stretch is between 8.4 degrees N and 37.6 degrees N, and the longitudinal stretch is between 68.7 degrees E and 97.25 degrees E.. The Tropic of Cancer at 23.30 degrees North latitude cuts across the country, dividing it almost into two equal halves. The country has the Andaman and Nicobar Islands in the south-east and the Lakshadweep Islands in the southwest. The land mass of India has an area of 3.28 million square km. India's total areas accounts for about 2.4 per cent of the total geographical area of the world. India is the seventh largest country of the world. India has a land boundary of about 15200 km and the total length of the coast line of the mainland including Andaman and Nicobar and Lakshadweep is 7516.6 km. Now .....will discuss as to how these physical features hav been of a great advantage to India.

Speaker2. Thank You .....To a large extent the unity and homogeneity of India has been promoted by the geographical features of the country. (i) On its north, India is bounded by lofty mountains. These mountains run east-west for thousands of kilometers. These provide a natural wall against all possible intrusions. (ii) On the south, India is surrounded by the seas and the ocean from three sides. It means, the land is protected from outside intrusions. Theses geographical features have ensured that: (i) people from outside could come only through well-defined routes, whether by sea or through passes in mountains. (ii) People who came from outside brought with them their cultural heritage. (iii) Indian society adapted itself to the new norms. (iv) Thus, by adopting new norms and values and accepting them as their own, unity and homogeneity came to be promoted. Now .....will discuss about North South Extent of India.

Speaker3. Thank you..... The north-south extent of India is larger than its east-west . The north-south distance between two successive latitudes remains the same or constant, and it is 3214 km is this case. But the east-west distance between the two successive longitudes goes on progressively decreasing from the equator to the poles. The maximum east-west extent is much less. It is 2933 km only. As the longitudinal extent of India is about 30º longitude the time lag between easternmost and westernmost points of India is of two hours. When it is 6.00 a.m at eastern extremity of India it is still 4.00 a.m. at the westernmost point of India. To avoid this time confusion, time along the Standard Meridian of India (82º 30` E) passing through Mizapur (in Uttar Pradesh) is taken as the standard time for the whole country. Now.....will discuss India vis a vis the World.

Speaker4. Significance of India's Location: (i) Very thickly populated parts of the world such as China, Japan and Southeast Asia lie very close to India. This has helped in developing trade and other relations with them. (ii) The oil rich countries of the Persian Gulf from whom India receives bulk of supplies are quite close. (iii) India enjoys a strategic position and commercially favorable location in respect of Africa, Asia Australia. (iv) The busy air-routes pass through India, connecting east, South East Asia and Australia on the one hand and Europe and America on the other. In sea also the Suez sea-route provides us the shortest route to industrial Europe and America.
The Indian Ocean, the third largest ocean in the world is named after India as the Indian subcontinent stands at the head of this ocean. India is called a subcontinent because of its vastness and distinct physical and cultural identity.
Now .....will discuss about India's Contacts with the outside World in Ancient and Medieval Times.

Speaker5. Thank you.....India belongs to the Eastern Hemisphere, which contains the oriental world. The central location of India at the head of the Indian Ocean was of great advantage. Countries of East Africa, West Asia, South and South-East Asia , and East Asia could be reached through sea routes. India established close cultural and commercial contacts with these countries. India's contacts with the outside world have continued through the ages. (i) The exchanges of ideas and commodities dates back to the ancient times. (ii) The ideas of the Upanishads, and the Ramayana, the stories of Panchatantras, the Indian numerals and the decimal system could reach many parts of the world. (iii) The spices, muslin and other Indian goods were taken to different countries. (iv) The influence of Greek sculpture, and the architectural styles of dome and minarets from West Asia can be seen in India. To the north of India are China, Nepal and Bhutan, and to the east, Bangladesh and Myanmar, to the west and northwest are Pakistan and Afghanistan. In the south, separated from India by the Palk Strait, lies the island country of Sri Lanka. To the south of Lakshadweep lies Maldives. Not far from the Andaman and Nicobar islands lie our closest South-East Asian neighbours: Indonesia, Malaysia and Thailand. With this we come to an end of our symposium. Thank you.

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 09(04) DOI 29 Apr 2016.Q.Sc. Force and laws of Motion
3. Electronic test - http://www.learnmyway.in 09(04) DOI 29 Apr 2016.ET.Sc. Force and laws of Motion

Mobile version of e-test is also available online.

Path to find the above mentioned contents on the internet / smart phone (mobile) www.learnmyway.in (Click on E curriculum) Click on your school folder (MSS School Patiala). Log on with the password.
Help Line : email Rajinder_k_sharma@yahoo.com Skype : rajinder.sharma1958 Mob : 9357388588