DAV PUBLIC SCHOOL SECL BISHRAMPUR

Diwali Vacation Home Work

CLASS : X 2026-27

English

You are required to prepare your English Portfolio as part of your homework. The portfolio template sent in your class group.

Please read the instructions carefully and complete all the questions neatly and sincerely. Make sure to submit your portfolio within the given time.

Hindi

1.आपके क्षेत्र में पटाखे की अवैध बिक्री हो रही है इसकी शिकायत करते हुए प्रदूषण नियंत्रण अधिकारी को लगभग **80** शब्दों में एक ईमेल लिखिए।

2. दीपावली के पावन अवसर पर शुभकामनाएं देते हुए अपनी बड़ी बहन को लगभग **40** शब्दों में शुभकामना संदेश लिखिए।

3. पीरियोडिक टेस्ट **3** के पाठ्यक्रम की पूरी तैयारी।

Sanskrit

कक्षा दशमी- पाठ्यपुस्तक मणिका

पाठ **6,7** श्लोकान्वय**,** अभ्यास प्रश्नोत्तराणि कण्ठस्थीकरणम्। पोर्ट फोलियो अपि निर्माणम्।

Mathematics

SOLVE THESE QUESTIONS IN ASSIGNMENT COPY

1.In a flight of 2800 km, an aircraft was slowed down due to bad weather. Its average speed is reduced by 100 km/h and time increased by 30 minutes. Find the original ration of the flight.?

2.Water is flowing at the rate of 15 km/hour through a pipe of diameter 14 cm into a cuboidal pond which is 50 m long and 44 m wide. In what time will the level of water in pond raised by 21 cm?

3.An aeroplane, when 3000 m high passes vertically above another plane at any instant, when the angle of elevation of the two aero planes from the same point on the ground are 60^o and 45^o respectively. Find the vertical distance between aero planes.

4.A toy is in the shape of a cone of radius 3.5cm mounted on a hemisphere of same radius. The total height of the toy is 15.5cm. Find the total surface area of toy ?

5.A cubical block of side 7cm is surmounted by a hemisphere. What is the greatest diameter the hemisphere can have ? Find the surface area of solid.

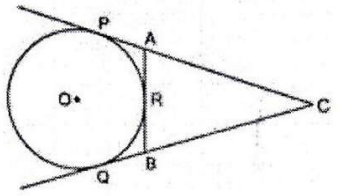
6.The p^{th} term of an A.P. is q and q^{th} term is p. Find $(p+q)^{th}$ term.

7.Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contact.

8.What is the ratio of the total surface area of the solid hemisphere to the square of its radius?

9.A sphere of radius r is divided into two equal parts . Find the total surface of two parts.

10.In figure, CP and CQ are tangents to a circle with centre O . ARB is another tangent touching the circle at R. If CP = 11 cm, BC = 7 cm, then find the length of BR .



11.Find the mode for the following data:

Classes	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	4	8	10	12	10	4	2

12.The following distribution shows the daily pocket allowance of children of a locality. The mean pocket allowance is Rs18. Find the missing frequency K.

Daily PocketAllowance	11-13	13-15	15-17	17-19	19-21	21-23	23-25
No. of Children	3	6	9	13	K	5	4

13.The radius of the incircle of a triangle is 4cm and the segments into which one side is divided by the point of contact are 6cm and 8cm. Determine the other two sides of the triangle

14. In Fig. 13.53, AB and CD are two diameters of a circle (with centre O) perpendicular to each other and OD is the diameter of the smaller circle. If OA = 7 cm, find the area of shaded region.

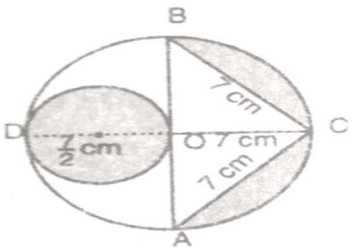


Fig. 13.53

15.A moving boat is observed from the top of 150 m high cliff moving away from the cliff. The angle of depression of the boat changes from 60º to 45º in 2 minutes. Find the speed of the boat in m/h.

16.In an equilateral triangle ABC the side BC is trisected at D. Prove that $9AD^2 = 7AB^2$.

17.ΔABC is an obtuse triangle, obtuse angled at B. If $AD \perp CB$, prove that $AC^2 = AB^2 + BC^2 + 2BC \times BD$.

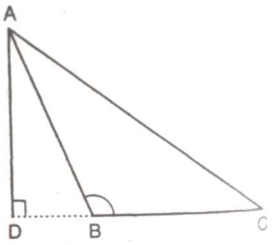


Fig. 7.220

18. ABC is a right triangle right-angled at C. Let BC = a, CA = b and AB = c and let p be the length of perpendicular from C on AB, prove that

(i) cp = ab (ii) $\frac{1}{p^2} + \frac{1}{a^2} + \frac{1}{b^2}$

19. The sums of first n terms of three A.P.s are S_1, S_2 and S_3. The first term of each is 5 and their common differences are 2, 4 and 6 respectively. Prove that $S_1 + S_3 = 2\ S_2$.

20.The ratio of the sum of n terms of two A.P's is (7n + 1) : (4n + 27). Find the ratio of their m^{th} terms.

21. A plane left 40 minutes late due to bad weather and in order to reach its destination, 1600 km away in time, it had to increase its speed by 400 km/hr from its usual speed. Find the usual speed of the plane

22.Solve for x:

(i) $\frac{1}{x-3} - \frac{1}{x+5} = \frac{1}{6}\ , x \neq 3, -5$ (ii) $\frac{16}{x} - 1 = \frac{15}{x+1}\ , x \neq 0, -1$

23.For which value(s) of **λ,** do the pair of linear equations $\lambda x + y = \lambda^2$ and $x + \lambda y = 1$ have

(i) No solution? (ii) Infinitely many solutions? (iii) A unique solution?

24.Graphically, solve the following pair of equation: $2x + y = 6 \ \ ; \ 2x - y + 2 = 0$

Find the ratio of the areas of the two triangles formed by the lines representing these equations

with the x-axis and the lines with the y-axis.

Science

Physics

1.To learn and revise the chapter Magnetic Effects of current.

2.To solve the numericals of chapter Electricity of NCERT in notes copy.

CHEMISTRY

1.(I) With the help of balanced chemical equations state the process of extracting (a) mercury from its ore called cinnabar, and (b) copper from its sulphide ore.

(ii) Silver and copper articles slowly lose their shiny surfaces when exposed to air. Name the compounds formed on (a) silver articles, and (b) copper articles in the form of coating.

2.(i) Write the name of two metals of moderate reactivity. Which one of the two is more reactive? How can this fact be demonstrated experimentally in a school laboratory?

(ii) Some metals of moderate reactivity are also found in the Earth's crust in the form of their carbonates. Name the processes involved in the extraction of metal from them, giving chemical equations for the reactions that occur.

3. A metal 'M' is stored under kerosene. It vigorously catches fire, if a small piece of this metal is kept open in air. Dissolution of this metal in water releases great amount of energy and the metal catches fire. The solution so formed turns red litmus blue.

(i) Name the metal 'M'.

(ii) Write formula of the compound formed when this metal is exposed to air.

(iii) Why is metal 'M' stored under kerosene?

(iv) If oxide of this metal is treated with hydrochloric acid, what would be the products?

(v) Write balanced chemical equations for:

(a) Reaction of 'M' with air.

(b) Reaction of 'M' with water.

(c) Reaction of metal oxide with hydrochloric acid.

BIOLOGY

1. Solve the questions given on Monohybrid and Dihybrid Cross.

2. Solve the intext question of Chapter- Heredity.

3. Learn the Chapter- " Why do organisms reproduce?" for upcoming periodic test.

Social Science

Economics

1. Explain the difference between formal and Informal source of credit.

2. Explain the role of self help groups in rural society.

3. Examine the importance of bank deposits?

4. Explain any three functions of money as a medium of exchange.

5. Explain the role of credit in the economics development of the country with example.

6. Explain the benefits of a bank to the people of a rural area.

7. Learn all questions chapter political parties of India.

AI

1. Define the following:
    a. Tokenisation
    b. Stop words
2. What is sentiment analysis? Give one example.
3. Differentiate between text-to-speech and speech-to-text.
4. What is a language translation tool? Give one example.
5. What are the major challenges faced by NLP while understanding human language?
6. 11. Explain the role of NLP in voice assistants such as Siri and Alexa.
7. What is stemming? How is it different from lemmatization?
8. What is text normalisation? Why is it required in NLP?
9. Explain the difference between syntax and semantics in NLP.
10. How does NLP help in spam email detection?