

Sanmati Hr. Sec. School Indore Session 2024-25 Class-11th SCIENCE SUBJECT - ENGLISH

# Q.1 Design a poster on the topic —'How CNG can be the best alternative to diesel and petrol.' (50 words) **[On a A-4 size sheet]**

Q.2 Write an essay on the topic - ' India's emergence as global leader'. (150-200 words) in a **[In the Notebook]** 

Q.3 Research on Khushwant Singh's life and works:-

Find out about the role of Khushwant Singh's father in building Delhi. Write your findings in your file with pictures.

Q.2 Human life is short-lived in contrast to nature. Comment on the statement in the light of the poem *A Photograph*.

Q.3 Discuss the values highlighted in the chapter *The Portrait of a Lady.* 

Q.4 Make a collage of various types of classified advertisement, cut from newspaper.[On suitable size of sheet]

Q. 5 Make a scrapebook of around 6- 8 pages having atleast 3 pictures and their description(Date/place/ name and relation of people with you/any memorable incident ) of your beautiful memories in the past.

Q. 6 Find atleast 5 poems from anywhere in which poet has expressed loss/demise of any of their loved ones. Write them on A-4 size papers (with its Title and Poet ) in beautiful manner with pictures if available. And compile them in a file .

# SUBJECT: PHYSICS

Write the following Experiments and Activities in your Practical File:

### SECTION-A

- 1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Calipers and hence find its volume.
- 2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.
- 3. To determine radius of curvature of a given spherical surface by a spherometer.
- 4. To find the weight of a given body using parallelogram law of vectors

#### Activities

- 1. To make a paper scale of given least count, e.g., 0.2cm, 0.5cm.
- 2. To determine mass of a given body using a metre scale by principle of moments.
- 3. To plot a graph for a given set of data, with proper choice of scales and errorbars.

## SECTION-B

- 1. To find the force constant of a helical spring by plotting a graph between load and extension.
- 2. To determine the surface tension of water by capillary rise method.
- 3. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
- 4. To study the relationship between the temperature of a hot body and time by plotting a coolingcurve.

#### Activities

- 1. To note the change in level of liquid in a container on heating and interpret the observations.
- 2. To study the factors affecting the rate of loss of heat of a liquid.
- 3. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.

# PROJECT:

Prepare a PPT on Dimensional analysis and its applications

# SUBJECT:CHEMISTRY

a) Prepare project file on any one of the following investigatory project:

i) Sterilization of water using bleaching powder.

ii) Rate of diffusion .

iii) Fertilizer analysis.

iv) Estimation of content of bone ash.

v) Amount of acetic acid in vinegar.

vi) Study of caffeine in different tea samples.

vii) Analysis of milk.

viii) Analysis of cold drink.

ix) Analysis of chocolates.

x) Foaming capacity of soaps.

# Project should be prepared under the following headings:

1)Front main page contain name of school ,topic of project ,class and submitted by and submitted to.

2) Certificate of authencity.

3) Acknowledgement

4) Index

5) Introduction

6) Theory

7) Experiment

8) Observation

9) Result

10) Bibliography

# b) Solve the worksheets in your notebook:

Q1. At the same temperature and pressure, an equal volume of gases contains the same number of \_\_\_\_\_.

a.) Molecules b) Electrons c) Protons d.) Particles

Q2. The gas law that relates the volume of a gas to the number of molecules of the gas is \_\_\_\_\_.

a.) Gay–Lussac's law b.) Avogadro's law c.) Boyle's law d.) Charle's law Q3. The mass % of carbon in CO<sub>2</sub> is .

a.) 0.034% b.) 27.27% c.) 3.4% d.) 28.7%

Q4. The empirical formula of benzene is \_\_\_\_\_.

a.) CH b.) C<sub>6</sub>H<sub>6</sub> c.) C<sub>3</sub>H<sub>3</sub> d.) C<sub>2</sub>H<sub>2</sub>

Q5. What is the mole fraction of the solute in a 1.00 molal aqueous solution.

a.) 0.00177 b.) 0.0344 c.) 0.0177 d.) 0.1770

Q6. State the number of significant figures in each of the following numbers:

i.) 207.35 ii.) 0.00368 iii.) 653 iv.) 3.63 × 104 v.) 0.378

Q7. What are the laws of chemical combination?

Q8. What are the applications of Avogadro's law?

Q9. Calculate the number of Cl- ions in 100ml of 0.001 M HCl solution.

Q10. Perform the following calculations and express the results to the proper number of significant figures:

i.)  $144.3m2 + (254 m \times 8.4 m)$  ii.)  $(4.05 \times 102 mL) - (0.0225 \times 102 mL)$ 

iii.)  $(3.50 \times 102 \text{ cm}) (4.00 \times 106 \text{ cm})$ 

Q11. Write the balanced chemical equations for the following reactions:

i.) Manganese dioxide and concentrated hydrochloric acid.

ii.) Sodium thiosulphate and iodine.

iii.) Copper and dilute nitric acid.

iv.) Sulphur dioxide and hydrogen sulphide.

Q12. Will the molarity of a solution at 50°C be the same, less or more than the molarity at 25°C?

Q13. Boron occurs in nature in the form of two isotopes having atomic mass 10 and

11. What are the percentage abundances of two isotopes in a sample of boron having an average atomic mass of 10.8?

Q14. How is mole related to the following?

i.) Mass ii.) Volume iii.) The number of molecules of a substance

Q15. What is cheaper?

40% HCl at the rate of 6 per kg or 80% H2SO4 at the rate of 3.5 per kg required to neutralise 7 kg of KOH.

Q16. Carbon and oxygen are known to form two compounds. The carbon content in one of these compounds is 42.9%, while in the other, it is 27.3%. Show that the data are in agreement with the law of multiple proportions.

Q17. Butyric acid contains only C, H, and O. A 4.24 mg sample of butyric acid is completely burnt. It gives 8.45 mg of carbon dioxide and 3.46 mg of water.

a.) What is the mass percentage of each element in butyric acid?

b.) Determine its empirical formula.

c.) The molecular mass of butyric acid was determined by the experiment to be

88. What is the molecular formula?

# **SUBJECT: MATHEMATICS**

# SUMMER ASSIGNMENT 2024-25 CLASS:XI TRIGONOME TRIC FUNCTIONS PRACTICE SHEET :1

1. Convert 40° 20 into radian measure.  
Ars. 121 π/540  
2. Convert 6 radians into degree measure.  
Ars. 343° 38 11 approximately  
3. Find the radius of the circle in which a  
central angle of 60° intercepts an arc of  
length 37.4 cm (use 
$$\pi = \frac{22}{7}$$
).  
Ans. 335.7 cm.  
4. The minute hand of a watch is 1.5 cm long.  
How far does its tip move in 40 minutes?  
(use  $\pi = 3.14$ ).  
Ans. 6.28 cm.  
5. If the arc of the same lengths in two circles  
subtend angles 65° and 65° and 110° at the  
centre, find the radian measures  
i)  $25^{\circ}$  Ans. 5π/37  
ii)  $-47^{\circ} 30^{\circ}$  Ans. -19 To  
the following degree measures:  
ii)  $-47^{\circ} 30^{\circ}$  Ans. -19 To  
the following degree measures corresponding to  
iii)  $\frac{5\pi}{3}$  Ans.  $300^{\circ}$   
8. A wheel makes 360 revolutions in one  
minute. Through how mary radians does it  
turn in one second? Ans. 12 $\pi$   
9. Find the degree measure of the angle  
subtended at the centre of a circle of  
radius 100 cm by an arc of length 22cm  
(use  $\pi = \frac{22}{7}$ ).  
9. Find the degree measure of the angle  
subtended angles 60° and 75° at the centre,  
find the ratio of their radii. Ans.  $32^{\circ}$  22.11  
9. Find the dugree measure of the angle  
subtended angles 60° and 75° at the centre,  
find the ratio of their radii. Ans.  $5\pi^{\circ}$  36  
8. A wheel makes 360 revolutions in one  
minute. Through how mary radians does it  
turn in one second? Ans. 12 $\pi$   
9. Find the degree measure of the angle  
subtended angles 60° and 75° at the centre,  
find the ratio of their radii. Ans. 5: 4  
11. If in two circles, arcs of the same length  
subtended angles 60° and 75° at the centre,  
find the ratio of their radii. Ans. 5: 4  
12. Find the angle in radian through which a  
pendulum swings if its length is 75 cm and  
13. The the angle in radian through which a  
pendulum swings if its length is 75 cm and  
Ans. sin  $\chi = 4/3$ , cose  $\chi = -3/12$ , sies in second quadrant.  
14. Ans. sin  $\chi = -4/3$ , cose  $\chi = -3/12$ , so  $\chi = -3$ 

13. If  $\cos x = -\frac{3}{5}$ , x lies in the third quadrant, find the values of other five trigonometric

the tip describes an arc of length i) 10 cm ii) 15 cm iii) 21 cm

functions. Ans. sin x = -4/5, cosec x =

Ans. i) 2/15 ii) 1/5 iii) 7/25

# CLASS:XI TRIGONOME TRIC FUNCTIONS PRACTICE SHEET :1

1. Prove that :  

$$3\sin \frac{\pi}{6} \sec \frac{\pi}{3} - 4\sin \frac{5\pi}{6} \cot \frac{\pi}{4} = 1$$
2. Find the value of sin 15°. Ans.  $\frac{\sqrt{3}-1}{2\sqrt{2}}$ .  
16. Prove that :  

$$\sin (\frac{\pi}{4} - x) = (\frac{1 + \tan x}{1 - \tan x})^2$$
.  
17. Prove that :  

$$\sin (x - \sin x) = \tan x$$
18. Prove that :  

$$\sin x - \sin x = \sin 2x \sin 10x$$
17. Prove that :  

$$\sin x - \sin x = \sin 2x \sin 10x$$
17. Prove that :  

$$\sin x - \sin x = \sin 2x = \sin 2x$$

$$\sin 17x - \sin 3x = -\frac{\sin 2x}{\sin 17x - \sin 3x} = -\frac{\sin 2x}{\cos 10x}$$
18. Prove that :  

$$\sin x - \sin y = \tan \frac{x - y}{2}$$
19. Prove that :  

$$\sin x - \sin y = \tan \frac{x - y}{2}$$
19. Prove that :  

$$\sin x - \sin y = \tan \frac{x - y}{2}$$
19. Prove that :  

$$\sin x - \sin x + \sin 2x = \cot 3x$$
10. Prove that :  

$$\sin x - 2\sin 3x + \sin x = \tan x$$
10. Prove that :  

$$\sin x - 2\sin 3x + \sin x = \tan x$$
10. Prove that :  

$$\sin x - 2\sin \frac{\pi}{4} + \cos^2 \frac{\pi}{3} - \tan^2 \frac{\pi}{4} = -\frac{1}{2}$$
12. Find the principal solution of the equation  
10. Prove that :  

$$2\sin^2 \frac{\pi}{4} + \cos^2 \frac{\pi}{4} - \tan^2 \frac{\pi}{4} = -\frac{1}{2}$$
13. Find the value of :  

$$3\sin^2 \frac{\pi}{4} + \cos^2 \frac{\pi}{4} + 2\cos^2 \frac{\pi}{3} = 10$$
13. Find the value of :  

$$3i\pi (\frac{\pi}{4} - x)\cos(\frac{\pi}{4} - y) - \sin(\frac{\pi}{4} - x)$$
13. Find the value of :  

$$(\frac{\pi}{4} - x)\cos(\frac{\pi}{4} - y) - \sin(\frac{\pi}{4} - x)$$
13. Find the value of :  

$$\sin(\frac{\pi}{4} - x)\cos(\frac{\pi}{4} - y) - \sin(\frac{\pi}{4} - x)$$
13. Find the value of :  

$$\sin(\frac{\pi}{4} - x)\cos(\frac{\pi}{4} - y) - \sin(\frac{\pi}{4} - x)$$
14. Prove the following:  
15. Prove the fo

i)  $\sin x + \sin 3 x + \sin 5x = 0$ 

#### CLASS:XI TRIGONOME TRIC FUNCTIONS PRACTICE SHEET :1

Ans. i)  $x = n\pi/3$  or  $x = n\pi$  ii)  $x = n\pi/3$  or ii)  $\cos = -\frac{1}{3}$ , in quadrant III  $n\pi \pm \pi/3$ 2. If sin x  $\frac{3}{5}$ , cos y =  $-\frac{12}{13}$ , where x and y Ans.  $\frac{\sqrt{6}}{3}, -\frac{\sqrt{3}}{3}, -2$ both lie in second quadrant, find the value iii)  $\sin x = \frac{1}{4}$ , in quadrant II of sin (x + y). Ans. -56/65 3. Prove that : Ans.  $\frac{\sqrt{8+2\sqrt{15}}}{4}, \frac{\sqrt{8-2\sqrt{15}}}{4}, 4+\sqrt{15}$  $\cos 2x \cos \frac{x}{2} - \cos 3x \cos \frac{9x}{2} = \sin 5x$  $sin \frac{5x}{2}$ 4. Find the value of  $\tan \frac{\pi}{8}$ . Ans.  $\sqrt{2} - 1$ 5. If  $\tan x = \frac{3}{4}$ ,  $\pi < x \frac{3\pi}{2}$ , find the value of 2,  $\frac{1}{2}$  and  $\tan \frac{x}{2}$ . Ans.  $3/\sqrt{10}$ ,  $-1/\sqrt{10}$  and -3 respectively. From that:  $\cos^2 x + \cos^2 \left(x + \frac{\pi}{2}\right) \cos^{-2} (x + \frac{\pi}{2}) \cos^{-2} (x +$ 7. Prove that :  $2 \cos \frac{\pi}{13} \cos \frac{9\pi}{13} + \cos \frac{3\pi}{13} + \cos \frac{5\pi}{13} = 0$ 8.  $(\cos x + \cos y)^2 + (\sin x - \sin y)^2 = 4 \cos^2 \theta$  $\frac{x+y}{2}$ . 9. Prove that :  $(\sin 7x + \sin 5x) + (\sin 9x + \sin 3x)$  $(\cos 7x + \cos 5x) + (\cos 9x + \cos 3x)$ tan 6x 10. Prove that :  $\sin 3x + \sin 2x - \sin x = 4 \sin x \cos \frac{x}{2} \cos \frac{x}{2}$  $\frac{3x}{2}$ 11. Find sin  $\frac{x}{2}$ , cos  $\frac{x}{2}$  and tan  $\frac{x}{2}$  in each of the following: i)  $\tan x = -\frac{4}{3}$ , x in quadrant II Ans.  $\frac{\sqrt{5}}{5}, \frac{2\sqrt{5}}{5}, 2$ 

# **SUBJECT: PHYSICAL EDUCATION**

I Topic - Practice of SAI Khelo India Fitness Test during summer at home.

Aim- To understand and promote healthy and fit lifestyle.

Objectives-

- To build cardio vascular endurance,
- To improve muscular endurance,
- To develop strength,
- To improve flexibility,
- To increase Neuromuscular coordination,
- To maintain healthy body weight.

Dear Athletes/Players,

Summer is the best time to storm your brain as there is no pressure on you and this is the best leisure time for you.

So keeping this in mind, I am sharing with you an assignment on SAI Khelo India Fitness Test.

For this assignment first you need to read the PDF file of SAI Khelo India Fitness Test very carefully and after that make a score card of your performance, in which on day one you need to perform all the tests and feed the score whatever you scored of different tests. Then practice of all the tests on regular basis and update your score card every week(for 4 weeks).

So in the end to the summer you will reach at your final score in your score card.

Make a comparison of your progress and right a short note of your assignment journey and submit it in June month.

Regards.

Precautionary measures -

- Avoid running on danger areas like roof, traffic road etc.
- Avoid exercise if not well or injured.
- Avoid exercise after meal, make 2.5 to 3 hours of gape after heavy meal(lunch).
- Practice with proper technique as suggested in PDF file.
- Exercise progression should be gradual.
- Avoid over exertion during practice.
- Have a healthy meal in your diet.

# **SUBJECT: COMPUTER SCIENCE**

1. Simple Calculator: Create a simple calculator program that can perform addition, subtraction, multiplication, and division operations on two numbers entered by the user. The program should prompt the user for input and display the result.

2. Guessing Game: Create a program that generates a random number between 1 and 100 and asks the user to guess the number. The program should provide feedback to the user, letting them know if their guess is too high or too low, until they correctly guess the number.

3. Word Count: Create a program that reads a text file and counts the number of words in the file. The program should prompt the user for the name of the file and display the word count.

4. Fibonacci Sequence: Create a program that generates the first n numbers of the Fibonacci sequence, where n is a number entered by the user. The program should display the sequence as output.

5. File Encryption: Create a program that reads a text file and encrypts the contents using a simple encryption algorithm of your choice. The program should prompt the user for the name of the file and the encryption key, and write the encrypted text to a new file.

6. Rock-Paper-Scissors: Create a program that allows the user to play a game of Rock-Paper-Scissors against the computer. The program should randomly choose one of the three options, compare it to the user's choice, and declare a winner.

# SUBJECT:BIOLOGY

# 11th Biology - The Living World

ONE MARK QUESTIONS:

1. Define growth.

2. Name two animals, which do not reproduce at all

3. What is metabolism?

4. Define biodiversity.

5. What is meant by nomenclature?

6. What is classification?

7. Why are the living organisms classified?

#### TWO MARK QUESTIONS:

 Plants and animals grow by mitotic cell divisions. What differences do they exhibit in their ? Explain.

9. Amoeba multiplies by miotic cell division. Is this phenomenon growth or reproduction?

10. How do the following reproduce asexually?

(a)Hydra (b) Planaria (c) Protenema of moss (d) Fungi

11. A plant may have different names in different regions of the country or world. How do botanists solve this problem?

12. Name the four processes that are basic to taxonomy.

#### THREE MARK QUESTIONS:

13. Describe binomial nomenclature with an example.

#### FIVE MARK QUESTIONS:

14. Explain the guidelines principles for nomenclature.

15. Define and understand the following terms.

(i)Phylum (ii)Class

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1. As we go from species to kin	gdom in a taxonomic hierarchy, the nur
of common characteristics	
<ul> <li>a) Will increase b) Will increase or decrease</li> </ul>	l decrease c)Remain same d) May
2. All living organisms are linke	ed to one another because
a) They have common ge	netic material of the same type
b) They share common ge	enetic material but to varying degrees
c) All have common cellu	lar organization (d) All of the above
3. Match the following and writ	e the correct option
a. Order	1.acstivum
b. Family	2.Mangifera
c. Species	3.Diptera
d. Class	4.Hominidae
e. Genus	5.Aves
Options a) a-3,b-4,c-1,d-5,e-2.	b) a-1,b-2,c-3,d-4,e-5

# **PROJECT WORK:**

Select one Project of your choice on any aspect of Biology. If required, make trips to collect data or material. Organize your writing material. Write in your own handwriting in the file; computer print-outs are not allowed.

Sub-headings : Title, Acknowledgement, Content page, Introduction, Actual Presentation / Content, Observation (if applicable), Case study (if applicable), Conclusion, Bibliography. Add pictures, photographs, press-release, wherever necessary. Cover the File. Write the project title, your Name and class.

# हिंदी

- हिंदी समाचार पत्र के इतिहास पर प्रकाश डालते हुए ले किन्ही दो समाचार पत्रों की समीक्षा लिखें।
  - 1. अमर उजाला
  - 2. पंजाब केसरी
  - 3. देशबंधु
  - 4. उदंत मार्तंड

2."नमक का दरोगा" कहानी के आधार पर "एक न्याय प्रिय अधीक्षक" की भूमिका को अपने शब्दो में लिखे।

3. "मसि कागद छूयो नहि, कलम गही नहि हाथ" कबीरदास जी के विषय में क्यों कहा गया है?

कबीर के जीवन पर शोध कर वर्णित करे।

4."पोस्ट कार्ड" का उपयोग कर अपने मित्र को परीक्षा में प्रथम श्रेणी में आने पर उसकी उज्ज्वल भविष्य की कामना करते हुए एक अनौपचारिक पत्र लिखे।

5. कोई एक व्यक्ति विशेष का साक्षात्कार लेकर अपनी पुस्तिका में चित्र के साथ वर्णित करे।

- 1. प्रिय शिक्षक
- 2. मेरे आदर्श भाई
- 3. मेरे बचपन का मित्र
- 4. मेरे पिता की सफलता की यात्रा।