



ST. ANGEL'S SCHOOL
AUTUMN HOLIDAYS
HOMEWORK(2017-18)
CLASS XI
(SCIENCE)

ENGLISH

ENGLISH [HORNBILL]

Chapter: 3 ‘Discovering Tut –The Saga Continues...’

Ques.1 → Would you call the mammoth efforts made by different people a waste of time and money ? Give your views with reference to the lesson Discovering Tut...

Ques.2 → Tourists find king Tut’s tomb very fascinating. Describe the tomb and its contents in detail.

Chapter :5 ‘ The Ailing Planet: The Green Movement’s Role’

Ques.1 → No generation has a free hold on this a earth. All we have is a life full repairing lease .” explain with reference to the chapter.

Ques.2 → Is there hope for environmental enrichment in future ? what is need to bring about the change from degradation to enrichment?

ENGLISH [SNAPSHOT]

Chapter: 4 ‘Albert Einstein At School’

Ques.1 → How do you distinguish between information gathering and insight formation?

Ques.2 → One may bind a human being to a system but not his spirit. With close reference to Einstein’s life in school, comment on the statement.

MATHS

Ch 7 Permutation and Combination

Q.1 In how many ways can 3 prizes be distributed among 4 boys , when

(1) no boy get more than 1 prize

(2) a boy may get any no. of prizes

Q.2 By using the digits 0,1,2,3,4,5(repetition is not allowed) no. are form by using any no. of digit . find the total no.s that can be form.

Q.3 Find the no.s of ways in which 1 can post 5 letters in seven letters boxes .

Q.4 In how many ways can the letter of the word 'DELHI' be arranged so that the vowels occupy on the even places

Q.5 How many no.s b/w 400 and 1000 can be form with the digits 0,1,2,3,4,5,6 if no digit repeted in the same no.

Q.6 In how many ways can the letters of the word

' ALGEBRA' be arranged without changing the relative order of the vowels and consonants

Q.7 How many words can be form with the letters of the word 'PARALLEL' so that all Ls do not come together

Q.8 A polygon has 44 diagonals find the no of its sides

Q.9 A tea party is arranged for 16 persons along two sides of a long table with 8 chairs on each

side . 4 persons wish to sit on one particular side and two on other side. In how many ways they be seated

Q.10 If the letters of the word 'MOTHER' are written in all possible orders and these words are written out as in a dictionary find the rank of the word

Ch 8 Binomial Expansion

Q.1 Find the 6th term of $(4x/5 - 5/2x)^9$

Q.2 Prove that there is no term involving x^6 in the expansion of $(2x^2 - 3/x)^{11}$ where $r \neq 0$

Q.3 Find the term independent of x in the expansion of $(2x - 1/x)^{10}$

Q.4 If the 6th, 7th and 8th term in the expansion of $(x+a)^n$ are resp. 112, 7 and $\frac{1}{4}$ find x, a & n .

Q.5 If the coefficient of $(2r + 1)$ th term and $(r + 2)$ th term in the expansion of $(1+x)^{43}$ are equal, find r

Q.6 If the coefficient of 5th, 6th and 7th term in the expansion of $(1+x)^n$ are in A.P find n

Q.7 Find the value of θ for which the coefficient of middle term in the expansion of $(1 + \theta x)^4$ and $(1 - \theta x)^6$ are equal find θ

PHYSICS

Gravitation

1

The mass of moon is nearly 10% of the mass of the earth. What will be the gravitational force of the earth on the moon, in comparison to the gravitational force of the moon on the earth?

A proton is accelerated through a potential difference V . Find the percentage increase or decrease in its deBroglie wavelength if potential difference is

2

Why an astronaut in an orbiting space craft is not in zero gravity although weight less?

Write one important use of (i) geostationary satellite (ii) polar satellite.

4

If earth has a mass 9 times and radius 4 times than that of a planet 'P'. Calculate the escape velocity at the planet 'P' if its value on earth is 11.2 kms^{-1}

At what height from the surface of the earth will the value of 'g' be reduced by 36% of its value at the surface of earth.

At what depth is the value of 'g' same as at a height of 40 km from the surface of earth.

5

Bulk properties of matter

1

It is easier to swim in sea water than in the river water. Why?

Railway tracks are laid on large sized wooden sleepers. Why?

2

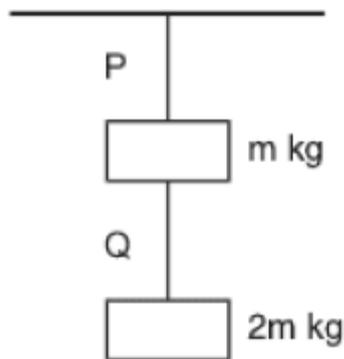
A wire of length l , area of cross-section A and young's modulus Y is stretched by an amount x . What is the work done?

Prove that the elastic potential energy per unit volume is equal to

$$\frac{1}{2} \times \text{stress} \times \text{strain} .$$

3

Two wires P and Q of same diameter are loaded as shown in the figure. The length of wire P is L m and its young's modulus is Y N/m^2 while length of wire Q is twice that of P and its material has young's modulus half that of P. Compute the ratio of their elongation.

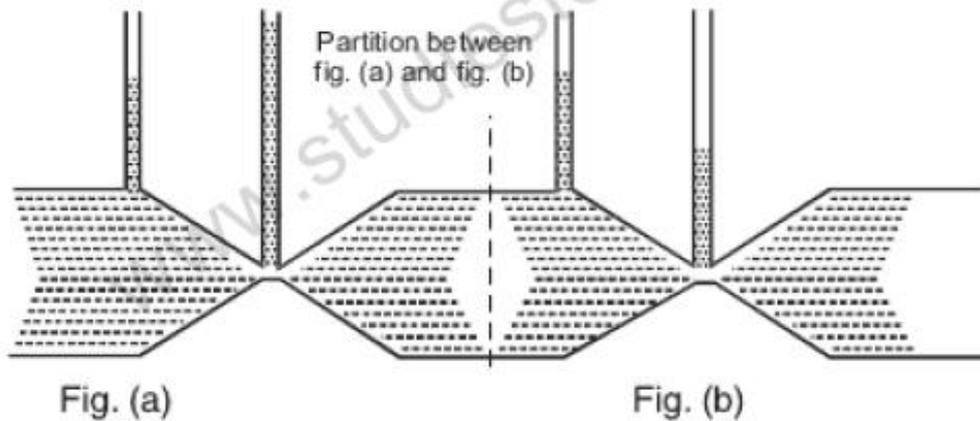


4

Draw stress – strain curve for elastomers (elastic tissue of Aorta)

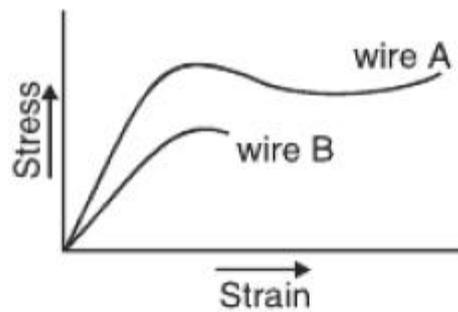
5

The fig (a) & (b) refer to the steady flow of a non viscous liquid. Which one of the two figures is incorrect? Why?



6

Stress strain curve for two wires of material A and B are as shown in Fig.



- which material is more ductile?
- which material has greater value of young's modulus?
- which of the two is stronger material?
- which material is more brittle?

CHEMISTRY

UNIT -4

CHEMICAL BONDING AND MOLECULAR STRUCTURE

Q1. Although both CO_2 and H_2O are triatomic molecules the shape of water molecule is bent while that of CO_2 is linear. Explain these on the basis of dipole moment.

Q2. Although geometries of NH_3 and H_2O molecules are distorted tetrahedral bond angle in water is less than that of ammonia. Discuss.

Q3. Give reason for the following-

1). Ionic compounds are soluble in water whereas covalent compounds are mostly insoluble in water.

2). Ionic compounds have higher melting points than the covalent compounds.

3). NaCl solution gives the white precipitate with AgNO_3 solution but CCl_4 or chloroform does not.

Q4. Arrange the following molecular species in increasing order of stability (giving bond orders):- O_2 , O_2^+ , O_2^- , O_2^{2-}

UNIT-5

STATES OF MATTER

- Q1. Why liquid diffuses slowly as compared to gases?
- Q2. At a particular temperature, Why vapour pressure of acetone is less than that of ether?
- Q3. What type of graph will you get when PV is plotted against P at constant temperature.
- Q4. Explain the effect of temperature on the following:
1. Surface tension 2. Viscosity 3. Vapour pressure 4. Density
- Q5. Give reason for the following:
1. Boiling point of liquid rises on increasing pressure.
2. Drop of a liquid assume spherical shape.
3. The level of mercury in a capillary tube is lower than the level outside when a capillary tube is inserted un mercury.
4. Tea or coffee is sipped from the saucer when it is quite hot.

UNIT-6th

THERMODYNAMICS

1. Briefly explain the term Enthalpy. How does it differ from Internal energy?
2. Entropy of diamond is less than that of graphite. What conclusion do you draw from this?
3. How is internal energy change (at constant pressure), free energy change and entropy change related to one another?
4. State the thermodynamics conditions of spontaneous occurrence of a process.
5. What is bond energy? Why is it called enthalpy of atomization?
6. Justify the following statements:
 - a. An exothermic reaction is always thermodynamically spontaneous.
 - b. An entropy of substance increases on going from liquid to vapour state at any temperature.

UNIT-7TH

EQUILIBRIUM

Q1. Why does ice melt slowly at higher altitudes?

Q2. State Le Chatlier's principle. Give two examples of its applications in chemical industries.

Q3. What are K_p and K_c ? Derive a relationship in between them.

Q4. Explain the effect of the following on the equilibrium constant:

1. Concentration of the reactants are doubled
2. The reaction is reversed
3. Catalyst is added to the reaction
4. Temperature is increased.

Q5. Calculate the pH value of .001N HNO_3 solution.

Q6. The value of K_w is 9.55×10^{-14} at a certain temperature. Calculate the pH of water at this temperature.

Q7. How can we predict whether a precipitate will be formed or not on mixing two solutions?

Q8: Explain Common ion effect.

BIOLOGY

CH – 11 TRANSPORT IN PLANTS

- Q.1 In plants, there is a complex traffic of compounds moving in different direction. Justify.
- Q.2 Describe the three properties of water responsible for transpiration driven ascent of sap.
- Q.3 How do apoplastic and symplastic movement occur in plants?
- Q.4 Explain the role of guard cells .
- Q.5 Differentiate between isotonic, hypotonic and hypertonic solution .

CH- 12 MINERAL NUTRTION

- Q.1 In what form do plants absorb molybdenum from the soil ?
- Q.2 What is hydroponics ? Give one application of this technique .
- Q.3 What is meant by flux ? Describe its two kinds.
- Q.4 Why do plants need potassium and magnesium?
- Q.5 Write four functions of calcium in plants .

CH-13 PHOTOSYNTHESIS IN HIGHER PLANTS

- Q.1 How is photorespiration useful to plants ?
- Q.2 Expand PEP.
- Q.3 How does the enzyme RuBisCo act as carboxylase and oxygenase respectively?
- Q.4 Differentiate grana and stroma of chloroplasts .
- Q'5 State the law of limiting factors .

CH- 14 RESPIRATION IN PLANTS

Q.1 What is the importance of F₀-F₁ PARTICLES in ATP production during aerobic respiration ?

Q.2 What is fermentation? Name any two compounds produced in this process .

Q.3 How does oxidative phosphorylation differ from photophosphorylation . Explain .

Q.4 Explain the major steps in Krebs's cycle ?

Q.5 Why is Krebs's cycle also called citric acid cycle ?

CH- 15 PLANT GROWTH AND DEVELOPMENT

Q.1 What induces parthenocarpy in grapes?

Q.2 Why is beet root plant called a long day plant ?

Q.3 What is kinetin chemically ?

Q.4 Where are auxins synthesized in plants ?

Q.5 How do the following influence growth in plants ?

(1) Nutrients (2)Oxygen

COMPUTER SCIENCE

1) Differentiate between :

- a) file and directory
- b) return & exit()
- c) break & continue
- d) break & goto statement
- e) while & do..while
- f) entry & exit control loops

2) Name header files for following:

- a) clrscr()
- b) ceil()
- c) gotoxy()
- d) strlen()
- e) floor()
- f) open()
- g) putchar()

3) define header file

4) What are escape sequence?

5) What are compound statements?

6) How do you generate random numbers in C++?

7) What are different types of control structures in C++ programming?

8) Can 'IF' function be used for comparing strings?

9) What are preprocessor directives?

10) What will be the output for the following, if s=10:

`s >= 10 && s < 25 && s != 12`

11) What is wrong with :

```
myName= " Robin";
```

12) What is endless(infinite) & empty loop?

13) When " switch" is preferred over "if"?

14) What is gets() function?

15) What is the use of semicolon after every program statement?

PRACTICAL QUESTIONS

- 1) Write a menu driven program to calculate area of various geometric figures:
 - a) area of square
 - b) area of rectangle
 - c) area of triangle
 - d) exit
- 2) Write a program to accept age of a person & check if is eligible to vote or not?
- 3) Write a menu driven program to work on number:
 - a) Display reverse number
 - b) Check if number is palindrome
 - c) Exit
- 4) Write a program to accept sales made by salesman & calculate his commission:

<u>Sales Made</u>	<u>Commission</u>
≥ 100000	5% of sales
<100000 & ≥ 50000	2.5 % of sales
<50000	1% of sales

- 5) Write a c++ program to calculate factorial of a number(use while loop)
- 6) Write a c++ program that converts lowercase letters in a given string to uppercase letters & vice versa.
- 7) Write a C++ program that reads three strings & prints longest & smallest string.
- 8) Write a program to print following pattern:

```
*
**
***
****
*****
```

- 9) Write a C++ program to print the following:

```
1
2 3
4 5 6
7 8 9 10
```

- 10) Write a C++ program that reads two strings and appends first to the second.
(Second string should come after first string)

PSYCHOLOGY

Ch-8 Thinking

- Explain the nature of thinking.
- How does reasoning help in solving problems?
- Does thinking can take place without language?
- How can creative thinking be enhanced?
- What are the various barriers to creative thinking?
- What is a concept? Explain the role of concept in the thinking process.

PHYSICAL EDUCATION

CHAPTER 7

- Q1. Make a list of test items of Rikli and Jones Test.
- Q2. Explain the procedure for conducting standing broad jump.
- Q3. Explain the procedure for eight foot up and go test.
- Q4. Describe the Rockport one mile test.

Note: Do the Holidays Home work in P.Ed. Register