ST. ANGEL'S SCHOOL

AUTUMN HOLIDAYS

HOMEWORK(2018-19)

CLASS XI

(SCIENCE)

ENGLISH

ASSIGNMENT   (HOTS/ EXCEEDING QUESTIONS)

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.

'The Laburnum Top'

Ques.1 What happened when the goldfinch came to the laburnum tree?

Ques.2   Why has the poem been named 'The Laburnum Top'?

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

Note: Solve in assignment register.

Ch 8 Binomial Theorem

Q.1 If the coefficients of three consecutive terms in the expansion of $(1+x)^n$ be 76,95 and 76, find n.

Q.2 Prove that there is no term involving x^6 in the expansion of $(2x^2-3/x)^{11}$ where r ≠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 respectively 112,7and ¼ 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

Q8 Show that the middle term in the expansion of $(x-1/x)^{2n}$ is $\dfrac{1.3.5..........(2n-1)\ (-2)^n}{n!}$

Ch 9 Sequence and Series

Q.1 Find the sum of the series

3+5+7+6+9+12+9+13+17+…..to 3n terms

Q.2 The sum of the 3 numbers in G.P is 38 and their product is 1728, find them.

Q.3 Find the sum of following Series

(1) 5+55+555+……..to n terms

(2)0.7+0.77+0.777+…..to n terms

Q.4 Prove that $6^{1/2}$. $6^{1/4}$.$6^{1/8}$ …….. =1/6

Q.5 Find two numbers whose arithmetic mean is 34 and geometric mean is 16.

Q.6 Insert 6 geometric means between 27 and 1/81.

Q.7 Find the sum of n terms of the series

a) $1.2^2+2.3^2+3.4^2+$…….

b) 3+15+35+63+…….

CH 10 STRAIGHT LINES

Q.1 A straight line passes through the point (θ ϕ) and this point bisects the portion of the line intercepted between the axes. Show that the equation of the straight line is x/2 θ+y/2ϕ =1.

Q.2 Reduce the line 3x-4y+4=0 and 2x+4y-5=0 to the normal form and hence find which line is nearer to the origin.

Q.3 Find the equation of the medians of a triangle formed by the line x+y-6=0, x-3y-2=0 and 5x-3y+2=0.

Q.4 Find the equation of the line parallel to y – axis and drawn through the point of intersection of the line x-7y+5=0 and 3x+y=0.

Q.5 Find the equation of the line which divides the join of A (1,0) and B (3,0) in the ratio 2:1 and perpendicular to it.

Q.6 Find the image of the point (2,1) with respect to the line mirror x+y-5=0.

Q 7 If the image of the point (2,1) with respect to the line mirror be (5,2), find the equation of the mirror.

Q.8 Find all the points on x+y=4 that lie at a unit distance from the line 4x+3y-10=0.

Q.9 Two sides AB and AC of an isosceles triangle are given by the equation 7x-y+3=0 and x+y-3=0 respectively and its third side passes through (1,-10).Determine the equation of the line BC.

Q10) Find the equation of the line through the intersection of 5x-3y=1 & 2x+3y-23=0 & perpendicular to the line 5x-3y-1=0.

PHYSICS

Q.1. A ladder is resting with one end on a vertical wall and the other end on horizontal flour. Is it more likely to slip when a man stands near the bottom or near the top?

Q.2. A stone of mass m tied to a string of length l is rotating along a circular path with constant speed v, what is the torque on the stone?

Q.3. How will you distinguish between a hardboiled egg and a raw egg by spinning each on table top?

Q.4. Name the physical quantity which has unit 'Joule-sec'.

Q.5. Why is there two propellers in a helicopter?

Q.6. Why is spokes fitted in a cycle wheel?

Q.7. If earth contracts to half its radius, what would be the length of a day?

Q.8. A ring and a disc have the same mass and radius. Find the ratio of their moment of inertia about their axis.

Q.9. What is the moment of inertia of a disc of mass m and radius r about a line parallel to the axis of disc but lying near the boundary of it.

Q.10. What is the moment of inertia of a uniform semicircular wire of mass M and radius R about a line perpendicular to the plane of the wire through the centre.

Q.11. A solid spherical ball ($MI = 2/5\ mr^2$) rolls on a table. What is the ratio of rotational KE to the total kinetic energy?

Q.12. Which physical quantity is defined as moment of momentum?

Q.13. What is SI unit of moment of inertia?

Q.14. Three particles of equal mass are located at the corners of an equilateral triangle. Locate the centre of mass.

Q.15. Which other physical quantity has same dimensions as that of torque?

Q.16. What is rotational inertia? Explain it.

Q.17. A solid and a hollow cylinder are allowed to roll down an inclined plane without slipping. If they have equal mass and radius which will reach the ground earlier and with higher speed. Explain the reason.

Q.18. A flywheel gains a speed of 540 rpm in 6 second. Find its angular acceleration.

Q.19. Two rings have their moment of inertia in the ratio 2 : 1 and their diameters are in the ratio 2 : 1. Find their ratio of masses.

Q.20. If no external torque acts on a body. Will its angular velocity remain conserved? Why or why ot?

Q.21. What is the power needed to maintain uniform circular motion? Justify your answer.

Q.22. A man is standing on a rotating table with his arms outstretched and holding heavy dumbbells in each hand. How can he increase his speed without using external torque?

Q.23. What is the moment of inertia of a uniform circular ring about a tangent in the plane of the ring?

Q.24 A solid cylinder of mass 20 kg rotates about its axis with angular speed 100rad s^{-1}. The radius of the cylinder is 0.25 m. What is the kinetic energy associated with the rotation of the cylinder? What is the magnitude of angular momentum of the cylinder about its axis?

Q.25 (i) A child stands at the center of a turntable with his two arms outstretched. The turntable is set rotation with an angular speed of 40 rev/min. How much is the angular speed of the child if he folds his hands back and thereby reduces his moment of inertia to 2/5 times the initial value? Assume that the turntable rotates without friction.

(ii) Show that the child's new kinetic energy of rotation is more than the initial kinetic energy of rotation. How do you account for this increase in kinetic energy?

CHEMSTRY

UNIT-9

HYDROGEN

1. What do you understand by (i) Electron-deficient (ii) Electron-precise (iii) Electron-rich compounds of hydrogen? Provide justification with suitable examples.
2. Account for the following:
   (i) dihydrogen gas is not preferred in balloons.
   (ii) Cone. H_2SO_4 cannot be used for drying H_2
3. Explain the following:
   (i) Temporary hardness can remove by boiling
   (ii) Soft water lathers with soap but hard water not.
4. Knowing the properties of H_2O and D_2O, do you think D_2O can be used for drinking purpose
5. Water molecule is bent, not linear. Explain?
6. Do you expect different products in solution when aluminium (III) chloride and potassium chloride treated separately with (i) normal water (ii) acidified water (iii) alkaline water? Write equation wherever necessary.
7. Which isotope of hydrogen is radioactive?
8. What is water gas? How is it prepared?
9. What type of elements form interstitial hydrides?
10. Name a substance which can oxidise H_2O_2

UNIT-10TH

THE S-BLOCK ELEMENTS

1. Arrange the following in the increasing order of solubility in water.
   $MgCl_2$, $CaCl_2$, $SrCl_2$, $BaCl_2$
2. What happens when sodium metal is heated in free supply of air?
3. What do you mean by diagonal relationship in periodic table?
4. Why is the solution of alkali metals in liquid ammonia conducting in nature?
5. Why are alkali metals always univalent? Which alkali metal ion forms largest hydrated ion in aqueous solution?
6. What is the effect of heat on the following compounds (Give equations for the reactions)?
   (i) $CaCO_3$ (ii) $CaSO_4 .2H_2O$
7. Explain the following:
   (a) Lithium iodide is more covalent than lithium fluoride.
   (b) Lattice enthalpy of LiF is maximum among all the alkali metal halides.
   (c) Why Cs is considered as the most electropositive element?
   (d) Lithium cannot be used in making photoelectric cells.
   (e) Lithium does not form alums

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 ? Discribe 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 .

Q5 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 phosphoryation differ from photophosphorylation . Explain .

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

Q.5 Why is Kreb'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

CHAPTER:10
FLOW OF CONTROL

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

CHAPTER:11
FUNCTIONS

1) Write the names of the header files to which the following belong:

(i) isdigit()   (ii) strcmp()   (iii) fabs()   (iv) gets()   (v) eof()

(vi) setw()   (vii) exit()   (viii) tolower()   (ix) ceil()   (x) feof()

(xi) strupr()   (xii) atoi()   (xiii) setprecision()   (xiv) floor()   (xv) remove()

(xvi) strstr()   (xvii) put()   (xviii) puts()   (xix) exp()   (xx) free()

(xxi) fwrite()   (xxii) write()   (xxiii) setiosflags()   (xxiv) sin()   (xxv) abs()

2) Describe different styles of function prototype in C++ using appropriate examples.

CHAPTER:12
ARRAYS

1) What are different types of arrays? What is the need for arrays?

2) How are two dimensional arrays represented in memory?

PRACTICAL QUESTIONS

(NOTE: DO THESE QUESTIONS IN YOUR PRACTICAL FILE)

1) Write a program to add two matrices.
2) Write a program to subtract two matrices
3) Write a program to find and display the sum of both the diagonal elements of a 2D array.
4) Write a C++ program that converts lowercase letters in a given string to uppercase letters & vice versa.
5) Write a C++ program that reads three strings & prints longest & smallest string.
6) Write a C++ program that reads two strings and appends first to the second.
   (Second string should come after first string)

PSYCHOLOGY

Chapter Covered- Ch-6 Learning , Ch-8 Thinking

1. Explain the nature of thinking.
2. How does reasoning help in solving problems?
3. Does thinking can take place without language?
4. How can creative thinking be enhanced?
5. What are the various barriers to creative thinking?
6. What is a concept? Explain the role of concept in the thinking process.
7. Discuss different types of learning with examples.
8. What do you understand by learning disability?

PHYSICAL EDUCATION

Ques-1 Ramesh, a young boy, works at construction sites. He lifts heavy weight on his head regularly. When he tried to join the army, he was shocked to know that the army doctor declared him unfit because of his feet deformity.

   (i) Name the postural deformity Ramesh is suffering from?
   (ii) Which exercise should Ramesh practice to correct his deformity?

Ques-2 Explain benefits, contradiction and technique of performing paschimottanasana?

Ques-3 Draw and give full details of your game in your register?"

Ques-4 Write about 'female athlete triad' in detail?

Ques-5 How AAHPER youth fitness test is administrated?

"All the students must wear winter uniform from 22-October 2018, excluding blazers or sweaters."