DELHI PUBLIC SCHOOL
SAIL TOWNSHIP, RANCHI
ASSIGNMENT 2018-19
CLASS- IX

PHYSICS

Q.1 The displacement -time graph for two particles A and B are straight lines inclined at angles of 30 degree and 60 degree with the time axis .Find the ratio of their velocities .

Q.2 A body starts from rest . What is the ratio of the distance travelled by the body during 4th and 3rd second ?

Q.3 From an elevated point A,a stone is projected vertically upwards .When the stone reaches a distance h below A , its velocity is double of what it was at a height above A. The greatest height attained by the stone is nh/3.what is the value of n ?

Q.4 A student pulls a box of books on a smooth horizontal floor with a force of 100 N in a direction of 37 degree above the horizontal surface . If the mass of the box and books is 40 kg ,what is the acceleration of the box ?

Q.5 A force of 5N gives a mass {M1}, an acceleration of 8.0 m/s2 and a mass {M2} ,an acceleration of 24 ml s2.What acceleration would it give if both the masses are tied together ?

Q.6 A force produces an acceleration of 2.0m/s^2 in a body A and 5.o m/s^2 in another body B. find the ratio of the mass of A to the mass of B.

Q.7 Explain the mathematical formulation of second law of motion .

Q.8 State and prove the principle of conservation of linear momentum .

Q.9 Deduce the following equation of motion (graphically)

V=u+at , S= ut +1/2at^2 , v^2-u^2 =2as

Q.10 State the importance of universal law of gravitation .

Q.11 Mention the difference between ' g' and 'G'.

Q.12 Prove that the acceleration due to gravity at the surface of moon is 1/6th of acceleration due to gravity at the surface of the earth .

Q.13 Derive Newton's inverse square rule form Kepler's third law .

Q.14 How much below the surface of earth does the acceleration due to gravity

(A)reduce to36%   (B) reduce by 36%; of its value on the surface of earth.

Q.15 State Archimede's principle .Estimate the magnitude of the buoyant force. State the application of Archimedes's principle .

Q.16 The mass of an empty bucket of capacity 10 litres is 1 kg .Find its mass when completely filled with a liquid of relative density 0.8 .

Q.17 How does a fish manage to move up and move down in water ?

Q.18 A metal cube is found to float in a liquid of density 2g/cm3 with 1/2 cm of its vertical side above the liquid. On placing a weigh of 144 g over its top ,it just submerges in the liquid .find the specific gravity of metal cube.

Q.19 Give Pascal's law and its applications.

Q.20 A hollow metal of mass 180.6g contains cavity of volume 2.5 cm3. This metal when placed in water displaces 24cc of water. Find specific gravity of metal

Q.21 A Planet of volume V and mass m has gravitational acceleration g on its surface .If it expands to 8 times its original volume . What will be the acceleration due to gravity?

CHEMISTRY
IS MATTER AROUND US PURE

1. Name the solute and solvent in tincture of iodine .

2. Define solubility of a substance. How does it vary with temperature?

3. What is the concentration of a solution which contains 16 grams of urea in 120 grams of a solution ?
4. How will you separate a mixture of kerosene oil and water ? Explain with the help of a diagram.
5. Which method is better for recovering sugar from sugar solution. Evaporation or crystallization ? Give reason for your answer .
6. What is fractional distillation ? What is the use of fractionating column in fractional distillation ?
7. Explain how nitrogen ,oxygen and argon gases are separated from air .
8. Define the following :
   (a) Sol   (b) Aerosol   (c) Emulsion   (d) foam
9. (a) The solubility of sodium chloride in water increases with rise in temperature while that of lithium carbonate decreases. Assign reason.
   (b) Water containing 88.8 % oxygen and 11.2% hydrogen is often used as a fire extinguisher. Can a mixture containing the two gases in the same ratio by mass be used for extinguishing fire?
   (c) The melting point of a solid when determined experimentally comes out to be 160°C. But its actual melting point as given in standard books is 150°C. Predict the nature of the solid.

ATOMS AND MOLECULES

1. Give example for a) Triatomic molecule and b) Poly atomic molecule.
2. Give one limitation of law of constant proportion.
3. An element 'X' forms an chloride salt with formula XCl_3. Write the formula of its oxide.
4. Write formula for the following compound------
   a) Sodium hydrogen sulphate   b) Calcium hydroxide   c) Potassium carbonate
   d) Phosphorus pentoxide
5. Write the names of elements present in ammonium sulphate, Write total number of atoms present in it. Mention ions present in this compound.
6. Find out molecular mass for the following compound--------
   a) Calcium chloride   b) Sodium phosphate   c) Magnesium oxide
7. Which among the following has more number of molecules: 1 g of hydrogen gas or 1 g of methane (CH_4)?
8. Verify that 5 moles of CO_2 and 5 moles of H_2O do not have the same mass.
9. a) Calculate the number of atoms in 80 g of calcium
   b) Calculate the number if moles in 75 g of NaCl.
10. i).What do the following symbols stand for
    a) 2H   b) H_2 c)H^+ d)   3 H_2
    ii).Verify that 60 g of C and 60 g of Mg have a molar ratio 2:1.

BIOLOGY

FUNDAMENTAL UNIT OF LIFE

Q1. Name two cell organelles . Which are semiautonomous in nature? Why are they called so?
Q2. Write the difference between rough endoplasmic reticulum and smooth endoplasmic reticulum.
Q3. Name two nuclei acid presents in a cell. What are their functions?
Q4. What do you mean by membrane biogenesis?
Q5. What is a gene? Give its functions.
Q6. Differentiate between cell wall and cell membrane.
Q7. Write the difference between nucleus and a nucleoid.
Q8. Why is cell called the basic unit of life?
Q.9 What are plastids name the different types of plastids & draw the   structure of any one.
Q.10 What will happen if there is no golgi bodies in the cell?
11. Why does the skin of our finger shrink when we wash clothes for a long time?
12. Write the difference between leucoplast and chromoplast.

13. What is the difference between tendon and ligaments?
14. State the difference between the tissue of the outer layer of the branch of a tree and the outer layer of a young stem.
15. What is the difference between simple permanent and complex permanent tissue?
16. Where are meristematic tissue present? What are its features?
17. Name the tissue that makes the husk of coconut. Write any three features of this tissue.
18. Differentiate between Xylem vessel and sieve tube.
19. How do cardiac muscle resemble both striated and smooth muscle fibre?
20. Describe blood as a connective tissue.
21 What are areolar tissue mention its two functions.
22 What are epithelial tissue? What are its different types?
23. What advantage do plants get by having dead tissues?
24. Do the roots of a plant continue growing after their tips are removed? Explain giving reasons.

HISTORY

1. Describe the Legacy of French Revolution . Name two Indian leaders who responded to the ideas of this revolution ?
2. Explain any five futuristic steps taken by Hitler to establish strong Nazi society?
3. How did the assigned role for women by Nazis help in the establishment of the Racial State? How were women perceived in Nazi Germany?
4. How can you say that Louis XVI and the taxation policy were responsible for the French Revolution.
5. Describe the role of the Philosophers like John Locke , Rousseau and Montesquieu in the French Revolution.
6. France abolished Monarchy and became a Republic finally. How did it all happen? Describe.
7. How did the Revolution affect everyday life of the people of France?
8. What was the 'Pseudoscientific theory of race'followed by Hitler ? How did Racial State established by Hitler in Germany?
9. When and how did Hitler invade Soviet Union ? How did USA enter into World War II?
10. "By the end of 1940, Hitler was at the Pinnacle of his power". Explain the statement .

POLITICAL SCIENCE

11. Who is an MLA?
12. Which elections are held at an interval of 5 years?
13. 'A constitution is a living document'. Justify.
14. Explain the features of a democracy.

ECONOMICS

15. What is the aim of production ? What are its factors ?
16. "Education is an important input of human capital formation."
17. What is meant by Green Revolution. What are its features?
18. Production is just creation of goods of higher value. Explain.
19. Why is a moneylender paid interest even though he does nothing by way of production of goods?
20. Briefly discuss the role of different factors of production in making a shirt ?
21. How does education and health contribute to a child's growth ?
22. More jobs only in IT sector generate an unequal society. Comment.
23. Which in your opinion is more important in employment generation – natural resources, machines or human capital? Why?

24. Which are of the two: expansion of service sector expansion of manufacturing sector would in your opinion be of greater benefit to Indian masses? Give reasons in support of your answer.

GEOGRAPHY

25. What is a drainage pattern? Explain the different types of drainage pattern.
26. 'Lakes are of great value to human beings'. Explain the statement with five points.
27. Why do we need a Standard Meridian? What is its significance?
28. Why are Ahmedabad and Kolkata able to see the noon sun exactly overhead twice a year but not Delhi?
29. How has the long coastline been beneficial to India?
30. Why are Himalayas called young fold mountains?
31. Which part of the Peninsula Plateau lies to the north of the Narmada river? Write any four features of it.
32 'The different physiographic units of India have unique features'. Explain.
33. Describe the largest peninsular west flowing river with regard to its source, flow and drainage basin.
34. How do rapid urbanisation and industrialisation cause river pollution?

MATHS

1. Find 2 irrational number between $\sqrt{2}$ and $\sqrt{3}$.
2. Represent $\sqrt{9.3}$ on the number line.
3. If $9^{x+2} = 720+9^x$, find the value of $(4x)^{\frac{1}{x}}$
4. If $x = \frac{\sqrt{3}+1}{2}$, find the value of $4x^3 - 2x^2 - 8x+7$
5. If $x = 2 + \sqrt{5}$, find the value of $x^3 + \frac{1}{x^3}$
6. If a+b+c = , then find the value of $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab}$
7. Factorise $8a^3 - b^3 - 4ax+2bx$
8. What must be added to x^4 +2x³-2x² +x-1
   so that the result is exactly divisible by x² +2x−3
9. Using factor theorem, factorise the polynomial
   2x⁴ +x³ − 14x² -19x-6
10. From a point in the interior of an equilateral triangle, perpendiculars are drawn on the three sides. The lengths of the perpendiculars are 14 cm, 10 cm and 6 cm. Find the area of the triangle.
11. The sides of triangle are 35 cm, 54 cm and 61 cm respectively. Find the length of its longest altitude.
12. Find the percentage increase in the area of a triangle if its each side is doubled.
13. What is the probability that a leap year, selected at random will contain 53 Mondays.
14. A bag contains 5 red balls and some blue ball. If the probability of drawing a blue ball is double that of red ball, Find the number of blue balls in the bag. (Hots)
15. A card is drawn from a well shuffled deck of 52 playing cards. Find the probability of drawing
    (i) a face card
    (ii) a red face card
    (iii) on ace
    (iv) '10' of a black suit
16. ABCD is a rhombus and AB is produced to E and F such that AE=AB=BF, prove that ED and FC are perpendicular to each other.

17. ABC is a triangle in which <B= 2<C. D is a point on BC such that AD bisects <BAC and AB=CD. Prove that <BAC=72°.

18 . From a solid cylinder of height 36 cm and radius 14cm, a conical cavity of radius 7cm and height 24 cm is drilled out. Find the volume and the TSA of the remaining solid.

19 . Four small villages are situated at the positions (-1,6),(1,2),(5,4) and (3,8). The Block Development Officer plans to set up a community centre at the position (2,5). Show these on a graph paper. (i) What has prompted the BDO to set up the community centre at (2,5)? (ii) Comment on the personality of the BDO.

20. Match the equations A,B,C,D and E with the lines L_1, L_2, L_3, L_4 and L_5 whose graphs are roughly drawn in the given diagram. A: 2x + y = 0, B: 2x + y= 2, C: x – 3= 0, D: y + 3= 0, E: 2x + 3y + 12= 0.

21. The present age of Jacob and his son are x years and y years respectively. Five years hence, the age of Jacob will be three times that of his son. Write a linear equation for this information and the graph.

22. A cylindrical can whose base is horizontal and of radius 3.5cm, contains sufficient water so that when a sphere is placed in the can, the water just covers the sphere. Given that the sphere just fits into the can, calculate: (i) the TSA of the can in contact with water when the sphere is in it; (ii) the depth of water in the can before the sphere was put into the can.

23. In the given figure, AB||DE, DE||FG, CD||EF, <2=55° and <4=60°, then find <1, <3 and <5.

24. A point O is taken inside an equilateral four sided figure ABCD such that its distance from the angular points D and B are equal. Show that AO and OC are in the same straight line.

25. ABCD is a square. M is the mid point of AB and PQ perpendicular to CM meets AD at P and CB produced at Q. Prove that: (i) PA=BQ   (ii) CP= AB+ PA.

26. The sum of the radii of two spheres is 10cm and the sum of their volumes is 880cm³. Find the product of their radii.

27. The volume of a cuboid whose sides are in the ratio 1:2:4, is same as that of a cube. What is the ratio of lengths of diagonals of cuboid to that of the cube?

28. In a triangle ABC, the sides AB, AC are equal and the base BC is produced to any point D. From D, DE is drawn perpendicular to BA produced and DF perpendicular to AC produced. Prove that BD bisects <EDF.

29 . ABCDE is a regular pentagon and bisector of <BAE meets CD at M. If bisector of <BCD meets AM at P, then find <CPM.

30. Find the area in square units of the triangle formed by the graphs of x=4, y=3 and 3x + 4y=12 by plotting these graphs on a graph paper.

कक्षा – नवमी   हिन्दी (अभ्यास) कार्य

प्र01   निम्नलिखित काव्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर लिखें–

हम पंछी उन्मुक्त गगन के,
पिंजरबद्ध न गा पाएँगे,
कनक–तीलियों से टकराकर
पुलकित पंख टूट जाएँगे।

हम बहता जल पीनेवाले,
मर जाएँगे भूखे–प्यासे,
कहीं भली है कटुक निबौरी,
कनक–कटोरी की मैदा से।

स्वर्ण–श्रृंखला के बंधन में
अपनी गति, उड़ान सब भूले,
बस सपनों में देख रहे हैं
तरु की फुनगी पर के झूले।

ऐसे थे अरमान कि उड़ते,
नीलगगन की सीमा पाने,
लाल किरण सी चोंच खोल,
चुगते तारक–अनार के दाने।

होती सीमा हीन क्षितिज से,
इन पंखों की होड़ा–होड़ी,
या तो क्षितिज मिलन बन जाता,
या तनती साँसों की डोरी।

नीड़ न दो, चाहे टहनी का,
आश्रय छिन्न–भिन्न कर डालो
लेकिन पंख दिए हैं तो
आकुल उड़ान मे विघ्न न डालो।

प्रश्न

(i) पक्षियों को कड़वी निबौरी किसकी अपेक्षा पसंद आती है और क्यों?

(ii) पिंजरे में बंद पक्षी क्या सपने देख रहे हैं?

(iii) (क) काव्यांश के लिए एक उपयुक्त शीर्षक लिखें।

   (ख) 'कटुक' और 'मिलन' के विलोम लिखिए।

प्र02   आर्थिक सहायता करनेवाले अपने मित्र के प्रति आभार प्रकट करते हुए पत्र लिखें।

प्र03   'बटरफ़्लाई' ब्रांड पेंसिल के लिए एक विज्ञापन लिखें। (25 षब्दों में)

प्र04   निर्देषानुसार प्रश्नों के उत्तर लिखिए:

(क) वर्ण–विच्छेद करें –

   अदृष्य, विश्राम

(ख) निम्नलिखित षब्दों में से उपसर्ग, मूल षब्द एवं प्रत्यय अलग–अलग कीजिए–

   उपमान, प्रसिद्ध, वास्तविक, सम्मानित

(ग) संधि–विच्छेद करें–

   परमेष्वर, वार्षिकोत्सव, सदैव, महर्षि

प्र05   ' दुःख का अधिकार' पाठ का लेखक चाहकर भी भगवाना की बुढ़िया माँ के प्रति सहानुभूति नहीं   जता सके। क्यों?

प्र06   रहीम के 'दोहे' पाठ के आधार पर बताएँ कि एक को साधने से सब कैसें सध जाता है?

प्र07   'मनुष्य का अुनमान और भावी योजनाएँ कभी–कभी कितनी मिथ्या और उल्टी निकलती हैं' – 'स्मृति'   पाठ के आधार पर आषय स्पष्ट करें।

कक्षा – नवमी   संस्कृत (अभ्यास) कार्य

प्र01   अधोलिखितम् अनुच्छेदं पठित्वा प्रश्नानाम् उत्तराणि लिखत्

रामः ष्यामः द्वौ धनिकौ आस्ताम्। रामस्य विशाल भवनम् आसीत्। तस्य अनेके उद्योगाः चलन्ति स्म। अत एव स एकदा प्रसन्नचितः ईष्वरं स्मरन् आनन्दे निमग्नः भवति स्म। ष्यामः लोभी आसीत्। सः   अधिकाधिकं धनसंग्रहं कर्तुम् इच्छति स्म। सर्वदा असन्तुष्टः दुःखी च भवति स्म। एकदा ष्यामः   कार्यवषात् रामस्य गृहम् अगच्छत्। आनन्दमग्नं तं दृष्ट्वा अपृच्छत् – भवतः आनन्दस्य षान्तेष्च किं रहस्यम्? रामः उवाच मित्र मम चत्वारः अंगरक्षकाः सन्ति। प्रथमः तु सत्यम् यत् माम् अपराधात् सर्वदा   रक्षति। द्वितीयः स्नेह:, तृतीयः न्याय:, चतुर्थः च त्याग अस्ति।

  I.   एकपदेन उत्तरत–
        (i) रामस्य कति अङ्कारक्षकाः आसन्?
        (ii) रामः ईष्वरं स्मरन् कस्मिन् निमग्नः भवति?

  II.   पूर्णवाक्येन उत्तरत–
        (i) ष्यामः लोभवषात् किम् इच्छति स्म?
        (ii) ष्यामः रामम् आनन्दमग्नं दृष्ट्वा किम् अपृच्छत्?

  III. निर्देषानुसारम् उत्तरत
        (i) 'रहस्यम्' इति पदस्य विषेषणपदं गद्यांषे किम् प्रयुक्तम्?
        (क) भवतः   (ख) आनन्दस्य   (ग) षान्तेः   (घ) किम्
        (ii) 'अन्यायः' इति पदस्य विलोमपदं गद्यांषे किं प्रयुक्तम्?
        (क) त्यागः   (ख) अपराधः   (ग) न्यायः   (घ) किम्
        (iii) 'आनन्दमग्नं तं दृष्ट्वा अपृच्छत्' अत्र तं सर्वनामपदं कस्मै प्रयुक्तम्?
        (क) ष्यामाय   (ख) रामाय   (ग) उद्योगाय   (घ) अंगरक्षकाय
        (iv) 'सुखस्य' इति पदस्य पर्यायपदं गद्यांषे किं प्रयुक्तम्?
        (क) आनन्दस्य   (ख) दुःखस्य   (ग) लोभी   (घ) स्नेहः
        (v) अस्य अनुच्छेदस्य कृते समुचितं षीर्षकं लिखत

प्र02   भवान् विषालः प्रयागे पठति। स्व–अध्ययनस्य प्रगति–विषये ज्येष्ठं भ्रातरः प्रति लिखिते पत्रे   रिक्तस्थानानि मंजूषायां प्रदतैः षब्दैः पूरयित्वा पुनः लिखत

                                                परीक्षाभवनम्
पूज्य भ्रातः।   (i) ....
                                                तिथिः ....

    (ii) ....
    कुत्र कुषलं। तत्रापि कुषलं कामये। अधुना (iii) .... दिनचर्या नियमेन आरब्धा। अहम् प्रतिदिनं   प्रातः (iv) .... उत्तिष्ठामि। ततः (v) .... पठितपाठानाम् आवृत्तिं करोमि। ....
    (vi) ....मया प्रथमं स्थानं (vii) ....। गणितविषये मम दुर्बलता अधुना (viii) ....। पितृभ्याम् मम (ix) .... ।

                                                भवताम् अनुजः
                                                (x) ....

मंजूषा

संस्कृतविषये, प्राप्ताम्, सादरं नमः, पंचवादने, प्रणामाः, प्रयागतः, मम, दूरीभूता, सप्तवादनपर्यन्तम्, विषालः

प्र03   काष्ठात्+अग्निर्जायते
प्र04   मुनिरयम् भोजनं करोति
प्र05   अजन्तम् पदं लिखत

                                                कृ0पृ0उ0

प्र06 महा+ऋर्षि यषं करोति

प्र07 ....अपि मधुरतरं किं भवति।   (मधु)

प्र08 भक्ताः ....सह ईष्वरं भजन्ति।   (साधु)

प्र09 ....सर्वत्र पूज्यते।   (विद्वस्)

प्र010 ....सरोवरेषु कमलानि विकसन्ति। (त्रि)

प्र011 अहम् त्वतः ....चक्षुषः दानम् इच्छामि। (एक)

प्र012 गतसप्ताहे त्वम् स्वाध्यायं न ....। (कृ)

प्र013 अहम् स्वमातरं ....। सेव्—लृट्

प्र014 अध्यापकः षिष्याय................। क्रुध्— लङ्

प्र015 ....किम् यदि श्रमः नास्ति। (जीवन)

प्र016 ....नमः (परोपकारी)

प्र017 उदिते............. कमलानि विकसन्ति। (सवितृ)

प्र018 काकः जलं पा+क्त्वा .... तृप्तः अभवत्

प्र019 भक्तः देवं नम्+तुमुन् .... गच्छति।

प्रदत्त पदानां समुचितम् उपसर्गं चित्वा लिखत

न्यवसत्

अभिभाषय

अवतारितः

प्र020 रेखांकित—पदानि आधृत्य प्रष्ननिर्माणं कुरूत

(i) स्वादुनि भक्ष्यकवलानि ते दास्यामि।

(ii) कुक्कुरः मानुषाणं मित्रम् अस्ति।

(iii) धर्मसर्वस्वं श्रुत्वा अवधार्यताम्

ENGLISH

1. BEEHIVE(Prose)

A TRULY BEAUTIFUL MIND

1.Answer the question in a couple of sentences:

Einstein was a peculiar child. Justify

2. SNAKE AND THE MIRROR

Answer the question in 30---40 words:

1.What similarity do you find in the story between the doctor and the snake?

3. MY CHILDHOOD

Answer in 30---40 words

1.Describe the benign and the liberal influence of parents , friends and teachers in shaping
   Kalam's personality.

BEEHIVE (POETRY)

WIND

Answer the question in couple of sentences:

1, What is the central idea of the poem?

RAIN ON THE ROOF

Answer in 30—40 words:

2.What type of dreamy fancies come to the poet's mind?

LAKE ISLE OF INNISFREE

Answer in 30—40 words:

3.Why is the poet deeply attached with the LAKE OF INNISFREE ? Explain

A LEGEND OF THE NORTHLAND

4. How did Saint Peter punish the old lady ?

MOMENTS(PROSE)

Answer in couple of sentences :

ISWARAN THE STORYTELLER

1. Who was Mahendra ? What was his job?

2.IN THE KINGDOM FOOLS

A) What was the trial in the court of the kingdoms of fools about?

3. THE HAPPY PRINCE

A) "Good deeds always pay " DO you agree? How were the Happy Prince and the swallow paid for their good deeds?

GRAMMAR

Fill up the following gaps with appropriate prepositions:

The next ten years are going a)------be the most challenging time b)------India's environment. Our development model remains focused c)------using nature as d)----fuel for its growth engine .Climate change is going to dominate environmental discourse e) -------the national and international levels . Environmental debates will focus f) ---------climate g)-----its impact on vulnerable communities as well as h)-------right of India to its fair share i)---------global carbon space.