D.A.V. Public School ,Behror

Summer Vacation Homework (2024-25)

Class – XI

Physics

Chapter -1 (Units and Measurements)

1.Name the different unit systems.

2.Name the supplementary base quantities along with their units and symbols.

3.Name the special units to measure very large and very small lengths.

4.Write the SI unit and dimensional formula of the following:

(i)Pressure (ii) power (iii) density. (iv) angle

5.Check the correctness of the given equations by dimensional analysis

(a)$S = ut + ½ at2$. (b)$Mgh = ½ mv2$

6. The distance covered by a particle in time t is given by $X = a+bt+ct2+dt3$.Find the dimensions of a,b,c And d.

7. State the number of significant figures in the following measurements:

(a)0.009m. (b)25.049 N/m. (c)1.80 x1011kg . (d) 5.308 J

8.. If the unit of force is1kN, unit of length1km and the unit of time is100s,what will be the unit of mass?

Chapter -2(Motion in straight line)

Here two statements are given- one labeled Assertion(A) and the other labeled as Reason(R).Select the Correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

(a)Both A and R are true and R is the correct explanation of A

(b)Both A and R are true and R is NOT the correct explanation of A

(c)A is true but R is false

(d)A is false and R is also false

1.Assertion: A particle having constant acceleration must always move on a straight line.

Reason: When magnitude of acceleration is constant, then speed of particle may remain constant.

2.Assertion : Displacement of a body may be zero when distance travelled by it is not zero

Reason : The displacement is the longest distance between initial and final position.

3.Assertion : The position-time graph of a uniform motion, in one dimension of a body cannot have Negative slope.

Reason : In one – dimensional motion the position does not reverse, so it cannot have a negative slope.

4.Assertion: For the uniform motion,the slope of position time graph will be constant.

Reason: The slope of position time graph represent velocity of the object and for uniform motion it is Constant.

5. Draw the following graphs for an object under free fall

(a)Variation of acceleration with respect to time

(b)Variation of velocity with respect to time

(c)Variation of distance with respect to time

6-The acceleration of a particle is given by $a = 3t^2 + 2t +2$,where time t is in second. If the particle starts with a velocity v = 2m/s at t = 0, then find the velocity at the end of 2s.

7.A body covers 200cm in the first 2 seconds and 220cm in next 2 seconds. What will be its velocity at the end Of 7 seconds ? Also find the displacement in 7 seconds.
8.On a 60 km straight road, a bus travels the first 30km with uniform speed of 30km/hr.How fast must the bus Travel the next 30km so as to have average speed of 40km/hr for the entire trip.

Chapter -3(Motion in a plane)

1.Under what condition ,the resultant of two vectors will be equal to either of them.
2. Determine a unit vector which is perpendicular to both A= 2$\hat{i}$ + $\hat{j}$ + $\hat{k}$ and B= $\hat{i}$ - $\hat{j}$ + 2$\hat{k}$
3.A stone falls from a building that is descending at a uniform rate of 12m/s. Find the displacement of the stone from The point of release after 10 sec .
4.Find the direction for an umbrella when rain falls vertically with a speed 20m/sand the wind blows from east To west with a speed of 15m/s.
5. A projectile is fired at an angle θ with the horizontal with velocity v .Derive the expression for maximum Height attained by it.
6.If both the speed of a body and radius of its circular path are doubled, what will happen to centripetal acceleration?
7. The sum of two forces acting at a point is 16N and their resultant force is 8N and its direction is Perpendicular to a smaller force .Calculate the two forces.
8. An aeroplane travelling at a speed of 500km/hr tilts at an angle of 30°As it makes a turn. What is the radius of the curve?

Chapter-4 (Laws of motion)

Case Study Based Questions

According to Newton's second law of motion ,F = m .a ,where F is the force required to produce an acceleration a in a body of mass m .If a= 0 then F = 0 , i. e , no external force is required to move a body uniformly along a straight line .If a force F acts on a body for t seconds , the effect of the force is given by impulse = F xΔt = change in linear momentum of the body .

1. A cricket ball of mass 150g is moving with a velocity of 12m/s and is hit by a bat so that the ball is turned back with a velocity of 20m/s. If duration of contact between the ball and the bat is 0.01 sec. The impulse of the force is
(a) 7.4Ns. (b) 1.2Ns (c) 4.8Ns . (d) 4.7Ns
2. Average force exerted by the bat is
(a) 480N (b) 120N (c) 1200N . (d) 840N
3. The retardation of the ball is
(a) 1600m/s2. (b) 320 m/s2. (c) 3200m/s2. (d) 160 m/s2
4. An impulsive force of 100N acts on a body for 1s. What is the change in its linear momentum?
(a) 10Ns (b) 100Ns (c) 1000Ns (d) 1Ns

BANKING OF ROADS

The maximum permissible velocity with which a vehicle can go round a level curved road without skidding depends On μ, the coefficient of friction between the tyres and the Road. The value of μ decreases when road is smooth or Tyres of the vehicle are worn out or the road is wet and so On. Thus force of friction is not a reliable source for Providing the required centripetal force to the vehicle. A Safer course of action would be to do the 'banking' of such roads.

5.The phenomenon of raising ……..of the curved road above the inner edge is called banking of Roads
(a)Inner edge (b)Centre (c)Outer edge (d)None of these
6-Normal reaction R of the banked road acts
(a)Along the surface of contact (b)Opposite to the weight w

(c) Perpendicular to the surface of contact (d)Any arbitrary direction

7.Centripetal force in case of a car moving on a banked circular road is provided by the following Components of various forces

(a)R sinθ, f cosθ (b)R cosθ, f sinθ (c)R, f (d)R, weight

8.The speed at which a banked road can be rounded even when there is no friction

(a) (rg/ tan θ)1/2 (b) (rg tan θ)1/2 (c)Zero (d)Infinity

CHEMISTRY

Q.1 Calculate the no. Of molecules present in 34.2 g of cane sugar (C12H22O11)1 drop of water having mass 0.05 g.124 g of P4

Q.2 Calculate the no. Of moles in

i)392 g of H2SO4 ii) 44.8lt of CO2 at STP

iii)6.022*1023 molecules of O2 iv) 65 ×10-6 g of C

Q.3 A solution of oxalic acid is prepared by dissolving 0.63g of acid in 250cm3 of solution.

Calculate a) Molarity b) Molarity

Q.4 How many grams of NaOH should be dissolved to make 100cm3 of 0.15M NaOH Solution?

Q.5 An aqueous solution of NaCl is marked 10% (w/w) on the bottle. The density of Solution is 1.07 gmL-1 . What is molality and molarity? What is the mole fraction of each Component in a solution.

Q.6 H2SO4 used in lead storage cell is 38% by mass and has density of 1.30 gcm3. Calculate its Molarity.

Q.7 i) Calculate empirical formula of gold chloride which contain 35.1% chlorine (atomic Mass of Au= 197)A substance was found to havee the following % composition : K= 31.84% , Cl= 28.98% , O= 39.18% . Calculate it's empirical and molecular formula if it's molecular mass is 122.5.

Q.8 i) Find out the atomic no, atomic mass, no. of proton, electron and neutron present in

Element with notation 92U238.

ii) A monoatomic anion of unit charge contains 45 neutrons and 36 electrons. Find at. No., mass no. of ion with its identification.

Q.9 Calculate wave no. and wavelength of radiation having frequency of 4× 1014 Hz.

Q.10 Calculate the wavelength of photon in A° unit having energy of 1eVolt.

Q.11 Calculate the radii of Bohr's 5^{th} orbit for H- atom and also calculate the radius of 3^{rd} orbit Of He+ ion.

Q.12 The mass of electron is 9.1 × 10-31 Kg. If it's K.E is 3× 10-25 J. Calculate it's wavelength.

Q.13 Two particles A and B are in motion. If the wavelength associated with particle A is 10-8 m, Calculate the wavelength associated with particle B if it's momentum is half of A.

Q.14 If an electron is moving with a velocity 600 ms-1 which is accurate upto 0.005% then

Calculate the uncertainty in its position. (h = 6.63 × 10-34Js, mass of e = 9.1× 10-31 Kg).

Q.15 Which of the following orbital is not possible? 7s, 2d, 3f, 1p

Q.16 Give the electronic configuration of following ions?Cu+ ii) Cr+3 iii) H- iv) S2-

Q.17 Neon gas is generally used in sign boards. If it emits strongly at 616 nm. Calculate a) frequency of the emission b) distance travelled by the radiation in 30 sec.c) Energy of quantad) No. Of quanta present if it produce 2 J of energy.
Q.18 Which one of the following pairs would have a larger size? Explain:-
K or K+ b) Br or Br- c) O2- or F-
Q.19 Which of the following pairs of elements would have more -ve .G.E? Explain a) N or O b) S or O c) C or Si
Q.20 Draw the trends in periodic properties of elements:-
a)E.G.E b) I.E c) Atomic radii d) Metallic character
e) Non metallic character f) Electronegativity
Q.21 Give the IUPAC names of the following compounds:-
Q.22 Write the state of hybridization of all the atoms in CH2= C= CH2 and draw it's orbital Structure
Q.23 Draw the resonance structures for the following compounds. Show the electron shift
Using curved-arrow notation.
a)C6 H5 OH b) C6 H5NO2 c) CH3 CH= CHCHO
d) C6H5—CH2+ e) C6H5—CHO
Q.24 Explain the terms Inductive and electromeric effects. Which electron displacement Effect explains the following correct orders of acidity of the carboxylic acid?
Cl3 C-COOH > Cl2 CH- COOH > ClCH2 -COOH
CH3CH2COOH > (CH3)2CHCOOH > (CH3)3C-COOH
Q.25 The quantum no. Of 6 electrons are given below. Arrange them in order of increasing Energies. List of any of these combinations has same energy:
N = 4, l= 2, m= -2 , s = -1/2 d) n = 3, l= 2, m= -1 , s = +1/2
N = 4, l= 1, m= 0 , s = +1/2 e) n = 3, l= 2, m= -2 , s = -1/2
N = 3, l= 1, m= -1, s = +1/2 f) n = 4, l= 1, m= 0, s = +1/2
Q.26 Write and learn the atomic no. 1 to 30 with atomic mass and electronic configuration Of Element.

English Core

QUESTIONS TO BE ANSWERED IN OWN WORDS :

1– How important you find the character of Khosrove ?
2– How does khuswant singh describe his grandfather's portrait?
3– I resolved to forget the address of all the things I had to forget. That would be the easiest. Mention the circumstance which made the narrator forget the address.
4– All the people on board, 'The wave Walker 'contributed in their own way to save the ship from capsizing. Explain.
5– Children today are so addicted to 'gadgets and gizmos 'that outdoor games have taken a backseat. Write an article for your school magazine on the topic, "Children and gadgets".
6— Inspired by the government's cleanlines Drive, your school DAV Behror, organizing a Poster Making competition on the topic "Cleanliness is next to Godliness". Prepare a suitable poster.
7– Define voice.write the types of voice. E the Rules to be followed while interchanging voices.(DO THIS IN A CHART PAPER)
8– write an application to the principal praying to waive the fees for three months.

9– Make 10 words out of these letters (E,E,B,R,D). Don't use less than 3 letters in a word.
10— write a paragraph on the topic "Fashion among students" .
11— change the following into passive voice :
A.. He writes a letter.
B.. He doesn't write a letter.
C.. Does he write a letter ?
D.. Doesn't he write a letter?
E .. He is writing a letter.
F.. . Is he writing a letter ?
G… Is he not writing a letter ?
H … Isn't he writing a letter ?
I… He has written a letter .
J.. He hasn't written a letter .
K.. Has he written a letter ?
L… Has he not written a letter?
This way manage to include each and every type of sentences from the Tense and transform them into passive voice.
12— Rearrange the following jumbled words into a meaningful sentences:
A– of It's residents/ becomes a/It reflect/a house/ the personality/ home when.
B– Has to look/ no rules/How our /there are /as to/ home.
C— Thing is/ inhabiting them/ should enjoy /the important /that we
D– About/ houses are /our lives/ personal statements.
E— The confidence/ in ourselves/ they reflect/ we have
F— We have /will be /the more/ individualistic/ confidence/ the more /our homes.

Mathematics

1.Which of the following set:The set of animals living on the earth.
(a)Finite set (b)Infinite set (c)Null set (d)none of these
2.Let A={1,3,5}, B={1,2,3}.Then A∪ B is equals to:
(a)□ (b){1,2,3,4,5} (c) {1,3} (d){5}
3. If the set A has 3 elements and the set B={3,4,5}, then the number of elements in AXB are
(a)9 (b) 29 (c)6 (d) 26
4. The range of f(x)=2-3x, x□R, x>0 is
(a)(-∞,2] (b) [2,∞) (c) (-∞,2) (d) (-2,∞]
5. Convert 250 into radian measure:
(a)5π/36 (b) 36/5π (c)π/36 (d)none of these
6)Find the degree measures corresponding to the -4 radian measures.
7) Express complex number I 9 +I 19 in the form a+ib.
8) Solve 24x < 100, x is a natural number.
9) What is the domain of sinx.
10) What is the range of secx.
11.If nc8 = nc9,find nc17.
12.If 1/6! +1/7! =x/8! ,find x.
13.A coin is tossed three times .write down its sample space in this experiment.
14.A card is drawn from a well shuffled deck of 52 cards. Find the probability that the no. of black cards.
15.10Cr= 10cr+2 ,find r
16.Write down into simplest form 10!/4!

17.If a die is thrown twice .write down the sample space .
18.A={ 1,2,3,4} B= { 2,3,4} find A∪ B=
19.A={ 4,6,8,10,12,14} 14□ A (T/F)
20 .A={ 1,2} B = (3,4} Write A X B , How many subset will A X B have
21.A wheel makes 360 revolution in one minute.through how mny radians does in turn in one minute.
22.Cot (A+ B) =……..
23.A function f is define by F(x) = 2x -5 . Write down the value of f(-3)
24.Write in standard form of complex no: 3+ 4i- (4i -3)
25.Find the conjugate : Z= √3-4i
26.Find modulus of 4-3i
27.Cos2x=----------
28.I9+i19=--------
29.Find the conjugate : Z= 3-4i
30.Find the modulas: Z= 6+8i

SECTION B

1.If A={1,2,3,4}, B={3,4,5,6}, C={5,6,7,8} and D={7,8,9,10}.Find BUCUD.
2.Write the relation R={(x,x 3): x is a prime number less than 10} in roster form.
3.Find the value of sin765°.
4.Find the mulplicative inverse of -i.
5.Solve the inequalities 3x-2< 2x+1.
6.How many words can be formed from the given words with or without meaning from the word BETTER .
7.Prove that tan4x =(4tanx(1-〖tan〗^(2) x))/(1+〖tan〗^(4) x-6〖tan〗^2 x)
8.HOW many words can be formed by using “PERMUTATIONS” which starts
(a) With P and ends with S. (b) P and S come together.
9.Find value of tan75°
10.Find the multiplicative inverse: of 3+i√5
11.Cos 4 x = 1- 8sin2x.cos2x. (Prove it)
12.Find the Domain and range:√(4-x^2)
13.G={7,8} H={5,4,2} find the Cartesian product(GXH)
14.A={2,4,6,8} B={1,3,5,7,9} U= {1,2,3,4,5,6,7,8,9}
.Prove that:
A’= B and. B’= A Where A’ and B’ are complements of sets
15.Find the multiplicative inverse: of z= √5 + 3i
16.Write the standard form of complex no(1-i) –(1+i6)
17.Find the Trignometric function :if cotx=3/4,x lie in III Quadrant.
18.A={1,2} find AxAxA
19.A={1,2,3,4,5} B={3,5,8,15} C= {6,7,9,11} find A∩(B∩C)
20.Find the domain and range of the function f (x) = |x-3|

SECTION C

1.Let f={(1,1),(2,3),(0,-1)(-1,-3)} be a function form Z to Z defined by f(x)=ax+b, for some Integers a,b. Determine a,b.
2.Prove that cos4x+cos3x+cos2x/sin4x+sin3x+sin2x= Cot3x.
3.If x-iy=a-ib/c-id, prove that (x 2 +y 2) 2 =a 2 +b 2 /c 2 +d 2
4.Solve the inequalities on the number line x/2 > 5x-2)/3-(7x-3)/5
5.Prove that-Tan4x= 4tanx(1-tan 2 x)/1-6tan 2 x+tan 4 x.
6.Solve the following inequalities graphically: 3x+5y≤15, x≤15 , y ≤ 20, x,y≥0:

7.From the word " AGAIN" a dictionary is formed. Find its 50^{th} word.
8.Solve graphically x+y≤4

X+y ≥0

X≥ 0

Y ≥0

9.In a group of students, 100 students know Hindi, 50 know English, 25 know both, each student know either Hindi or English. How many students are there in the group

OR

A{1,3,3,4,5,6}, B={3,5,7} C={7,8,9,} prove that ((A∪ B)∪ C =A∪ (B∪ C)

10.Determine the Domain and Range of relation R Defind by R={x,x+5} : xϵ{0,1,2,3,4,5}

11.Prove that cot x .cot 2 x –cot2x.cot3x-cot3 x . cot x =1

12.Find the value of sin((-11π)/3)

13.Find the value of sin75°

14.If ((1+i)/(1-i))^m=1 Find the value of m.

15.In a group of 70 people 37 like coffee, 53 like tea and each person likes at least one of the two drink how many people like both coffee and tea.

16.(i)Find the Domain and Range √(9-x^2)

17.Find the Domain of function (x^2+3x+5)/(x^2-5x+4)

18.Prove that (□cos cos 4 x+cos3x+cos2x)/(□sin sin 4x+sin3x+sin2x) = cot 3 x

19.Prove that Cos 6 x =32 cos 6 x – 48 cos4x +18 cos2x-1

20. If a+ib = 〖(x+i)〗^2/(〖2x〗^2+1) prove that a^2+b^2= 〖(x^2+1)〗^2/ 〖(〖2x〗^2+1)〗^2

21. if α and β are different complex numbers with |α| = 1 , then find |(β-α)/(1-αβ)|

22.find the modulus of (1+i)/(1-i) - (1-i)/(1+i)

D.A.V. Public School, Behror
Holiday Homework(Session-2024-25)
Class 11th
Sub.Hindustani Music(Vocal)

नोट:सभी प्रश्नों को अच्छे से कॉपी में लिखें व याद करें।

1.नाद, श्रुति,स्वर, सप्तक, थाट, जाती,लय-ताल के बारे में लिखें व याद करें।

2.मारगी व देसी संगीत और राग के बारे में विस्तार से लिखें व याद करें।

3.आलाप व तान को विस्तार से लिखें व याद करें।

I.P.(065)

Q.1 Write different types of python data types.
Q.2 Write a python program for calculator.
Q.3 Write a python program of looping.
Q.4 Make a Google form for quiz.
Q.5 Write and learn different types of python character set.
Q.6 Write and learn about Role of Operating System.
Q.7 Write the structure of SQL programs.
Q.8 Write the use of python language.
Q.9 What is array?
Q.10 Write five program of list, tuple, dictionary.

Physical Education

Q1. Discuss the health – related and administration related career in physical education.

Q2.Explain any two elements of Yoga .

Q3.How can yoga help in maintaining healthy lifestyle.

Q4. Explain the role of Yoga in sports.

Q5. Explain the procedure of measuring somatotypes in brief.