

DAV PUBLIC SCHOOL
SRESHTHA VIHAR, DELHI
HOLIDAYS HOMEWORK
CLASS-XI

ENGLISH

Q1. Prepare to speak on all the given topics:

- (a) Changing role of women in 21st century
- (b) Benefits of a hobby
- (c) Newspapers ought to contain more news and fewer advertisements
- (d) Benefits of early rising
- (e) Every child should learn to cook
- (f) Teens should have weekend jobs

Q2. Read the newspaper daily. Cut and paste classified advertisements for (two each)

- (a) Situation Vacant
- (b) For Sale (property, vehicles, goods)
- (c) To Let
- (d) Lost and Found
- (e) Travels and Tours
- (e) Matrimonial
- (f) Missing Persons/Things/Pets
- (g) Tours and Travels
- (h) Situation Wanted

Q3 Read all the 5 poems (from Hornbill) and highlight the presence of the listed literary devices in each poem

Simile, Metaphor, Personification, Alliteration, Repetition, Oxymoron, Paradox and Transferred Epithet (Explain the literary devices and cite examples)

Q4. Do as directed:

1. They could see far into the distance. Use 'able to'

2. I took him around with me. Change the voice
3. "Did you like the story, Meenu?" Raghu asked. Change into Indirect Speech
4. It is achievable. Rewrite as negative
5. Dora had never received such a gift. Rewrite in Present Perfect tense
6. The dog sprang ----- the table. Use suitable preposition in the blank space
7. Cricket is more popular than any other game in India. Change into superlative degree
8. Akshardham is the most beautiful building in Delhi. Change into comparative degree
9. Ram does his work with diligence. Change into future perfect
10. We reached the station. The train had left. Join using a subordinate clause
11. Why hasn't the assignment been completed by you? Change the voice
12. Many of them are struggling in many places. Use Past perfect continuous
13. Madhu is _____ model and _____ artist. Use suitable articles in blanks
14. Industrial wastes -----pollutes/pollute the atmosphere. Rewrite using correct verb form
15. He earns a six figure salary. Use Present perfect continuous
16. Meet me ___10.30 a.m. _____Monday. Use suitable prepositions in blanks
17. Vivekananda was one of the most popular Indian saints. Change into positive degree
18. He has been living here ----- 1992. since/for/from
19. I prefer coffee ----- tea. than/to/for)
20. Ram said to the teacher, "May I go to wash my hands"? rewrite in indirect speech

Q5. Write the correct sequence of sentence:

- 1 a. appear in examinations
- b. many students from all over India
- c. by different organizations
- d. which are held on all India basis
- 2 if it was time to go yet
- q. and ran downstairs to see
- r. Rahul jumped out of bed
- s. on Saturday morning

Q 6. Revise: (For 1st Unit Test)

- (a) The Portrait of a Lady by Khushwant Singh

(b) A Photograph by Shirley Toulson

Q 7. Practice:

(c) Notice Writing

(d) Comprehension Passage

(e) Integrated Grammar

Note: Holidays Homework should be done in English Register/ Notebook

MATHS

Mark the correct alternative in each of the following:

- For any set A , $(A)'$ is equal to
(a) A' (b) A (c) ϕ (d) none of these.
- Let A and B be two sets in the same universal set. Then, $A - B =$
(a) $A \cap B$ (b) $A' \cap B$ (c) $A \cap B'$ (d) none of these.

SETS

1.49

- The number of subsets of a set containing n elements is
(a) n (b) $2^n - 1$ (c) n^2 (d) 2^n
- For any two sets A and B , $A \cap (A \cup B) =$
(a) A (b) B (c) ϕ (d) none of these.
- If $A = \{1, 3, 5, B\}$ and $B = \{2, 4\}$, then
(a) $4 \in A$ (b) $\{4\} \subset A$ (c) $B \subset A$ (d) none of these.
- The symmetric difference of A and B is
(a) $(A - B) \cap (B - A)$ (b) $(A - B) \cup (B - A)$
(c) $(A \cup B) - (A \cap B)$ (d) $\{(A \cup B) - A\} \cup \{(A \cup B) - B\}$
- The symmetric difference of $A = \{1, 2, 3\}$ and $B = \{3, 4, 5\}$ is
(a) $\{1, 2\}$ (b) $\{1, 2, 4, 5\}$ (c) $\{4, 3\}$ (d) $\{2, 5, 1, 4, 3\}$
- For any two sets A and B , $(A - B) \cup (B - A) =$
(a) $(A - B) \cup A$ (b) $(B - A) \cup B$
(c) $(A \cup B) - (A \cap B)$ (d) $(A \cup B) \cap (A \cap B)$.
- Which of the following statement is false :
(a) $A - B = A \cap B'$ (b) $A - B = A - (A \cap B)$
(c) $A - B = A - B'$ (d) $A - B = (A \cup B) - B$.
- For any three sets A , B and C
(a) $A \cap (B - C) = (A \cap B) - (A \cap C)$ (b) $A \cap (B - C) = (A \cap B) - C$
(c) $A \cup (B - C) = (A \cup B) \cap (A \cup C)$ (d) $A \cup (B - C) = (A \cup B) - (A \cup C)$.
- Let $A = \{x : x \in \mathbb{R}, x \geq 4\}$ and $B = \{x \in \mathbb{R} : x < 5\}$. Then, $A \cap B =$
(a) $(4, 5)$ (b) $(4, 5)$ (c) $(4, 5)$ (d) $(4, 5)$
- Let U be the universal set containing 700 elements. If A, B are sub-sets of U such that $n(A) = 200$, $n(B) = 300$ and $n(A \cap B) = 100$. Then, $n(A' \cap B') =$
(a) 400 (b) 600 (c) 300 (d) none of these.
- Let A and B be two sets such that $n(A) = 16$, $n(B) = 14$, $n(A \cup B) = 25$. Then, $n(A \cap B)$ is equal to
(a) 30 (b) 50 (c) 5 (d) none of these
- If $A = \{1, 2, 3, 4, 5\}$, then the number of proper subsets of A is
(a) 120 (b) 30 (c) 31 (d) 32
- In set-builder method the null set is represented by
(a) $\{ \}$ (b) ϕ (c) $\{x : x \neq x\}$ (d) $\{x : x = x\}$
- If A and B are two disjoint sets, then $n(A \cup B)$ is equal to
(a) $n(A) + n(B)$ (b) $n(A) + n(B) - n(A \cap B)$
(c) $n(A) + n(B) + n(A \cap B)$ (d) $n(A) n(B)$ (e) $n(A) - n(B)$
- For two sets $A \cup B = A$ iff
(a) $B \subseteq A$ (b) $A \subseteq B$ (c) $A \neq B$ (d) $A = B$
- If A and B are two sets such that $n(A) = 70$, $n(B) = 60$, $n(A \cup B) = 110$, then $n(A \cap B)$ is equal to
(a) 240 (b) 50 (c) 40 (d) 20

19. If A and B are two given sets, then $A \cap (A \cap B)^c$ is equal to
 (a) A (b) B (c) Φ (d) $A^c \cap B^c$
20. If $A = \{x : x \text{ is a multiple of } 3\}$ and, $B = \{x : x \text{ is a multiple of } 5\}$, then $A - B$ is
 (a) $A \cap B$ (b) $A \cap \bar{B}$ (c) $\bar{A} \cap \bar{B}$ (d) $\overline{A \cap B}$
21. In a city 20% of the population travels by car, 50% travels by bus and 10% travels by both car and bus. Then, persons travelling by car or bus is
 (a) 80% (b) 40% (c) 60% (d) 70%
22. If $A \cap B = B$, then
 (a) $A \subset B$ (b) $B \subset A$ (c) $A = \Phi$ (d) $B = \Phi$
23. An investigator interviewed 100 students to determine the performance of three drinks: milk, coffee and tea. The investigator reported that 10 students take all three drinks milk, coffee and tea; 20 students take milk and coffee; 25 students take milk and tea; 12 students take milk only; 5 students take coffee only and 8 students take tea only. Then the number of students who did not take any of three drinks is
 (a) 10 (b) 20 (c) 25 (d) 30
24. Two finite sets have m and n elements. The number of elements in the power set of first set is 48 more than the total number of elements in power set of the second set. Then, the values of m and n are :
 (a) 7, 6 (b) 6, 3 (c) 6, 4 (d) 7, 4 (e) 3, 7
25. In a class of 175 students the following data shows the number of students opting one or more subjects. Mathematics 100; Physics 70; Chemistry 40; Mathematics and Physics 30; Mathematics and Chemistry 28; Physics and Chemistry 23; Mathematics, Physics and Chemistry 18. How many students have offered Mathematics alone ?
 (a) 35 (b) 48 (c) 60 (d) 22 (e) 30

ANSWERS

1. (b) 2. (c) 3. (d) 4. (a) 5. (d) 6. (b) 7. (b) 8. (c)
 9. (c) 10. (a), (b), (c) 11. (c) 12. (c) 13. (c) 14. (c) 15. (c)
 16. (a) 17. (a) 18. (d) 19. (d) 20. (b) 21. (c) 22. (b) 23. (b)
 24. (c) 25. (c)

COMPUTER SCIENCE

CLASS XI - A COMPUTER SCIENCE HOLIDAYS HOMEWORK

Digital India is a campaign launched by the Government of India in order to ensure the Government's services are made available to citizens electronically by improved online infrastructure and by increasing Internet connectivity or by making the country digitally empowered in the field of technology.

To promote knowledge and awareness amongst students following topics have been shortlisted for the purpose of exploration by Digital Students.

Complete the below mentioned activity assigned according to the first alphabet of your name

Starting Letter of Name	Topic
A-B	PowerPoint Presentation or movie on <i>Artificial Intelligence</i>
C-M	PowerPoint Presentation or movie <i>Top IT Companies</i>
P-S	PowerPoint Presentation or movie <i>Mobile Operating Systems, Processors and Browsers</i>
T-Y	Model on <i>Types of Network(LAN, PAN, MAN, WAN)</i>

NOTE: Presentation / Movie can be designed using any software.

**CLASS XI - B
COMPUTER SCIENCE
HOLIDAYS HOMEWORK**

Digital India is a campaign launched by the Government of India in order to ensure the Government's services are made available to citizens electronically by improved online infrastructure and by increasing Internet connectivity or by making the country digitally empowered in the field of technology.

To promote knowledge and awareness amongst students following topics have been shortlisted for the purpose of exploration by Digital Students.

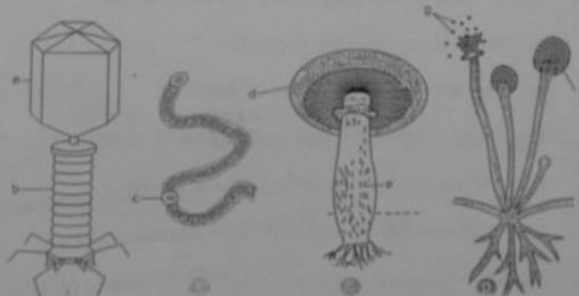
Complete the below mentioned activity assigned according to the first alphabet of your name

Starting Letter of Name	Topic
A-H	PowerPoint Presentation or movie on <i>Artificial Intelligence</i>
I-N	PowerPoint Presentation or movie <i>Top IT Companies</i>
O-R	PowerPoint Presentation or movie <i>Mobile Operating Systems, Processors and Browsers</i>
S-Y	Model on <i>Types of Network(LAN, PAN, MAN, WAN)</i>

NOTE: Presentation / Movie can be designed using any software.

BIOLOGY

1. What are Conidia? How are they different from sporangiospores?
2. What are viroids?
3. Are chemosynthetic bacteria autotrophic or hypertrophic?
4. How do delicate fungi hyphae penetrate hard timber?
5. Compare salient features of monera and protista.
6. Highlight criteria used for 5 kingdom classification.
7. Draw diagram of Euglena and Paramecium.
8. Describe decomposer Protists.
9. Enumerate different types of Protists.
10. Describe different types of ~~coelom~~ ^{coelom} with diagram.
11. List excretory organs invertebrata phyla.
12. Give differences b/w spider and insects.
13. Name a parasitic annelid. Describe its habitat, habits and economic character.
14. Name an organism that is made up of two components which live together in symbiotic relationship. What is their ecological significance?
15. Give one basic difference between bacteria and archaebacteria that has led the later to survive extreme conditions.
16. Distinguish between plant viruses and bacteriophages on the basis of genetic material.
17. With the help of well labelled diagram describe the structure of typical bacterial cell.
18. Identify the following organisms(A,B,C,D) and the structures associated with them(a,b,c,d,e,f,g).



CHEMISTRY

Some Basic Concepts of Chemistry

Assignment – 1

Q-1) What mass of sodium chloride would be decomposed by 9.8g of sulphuric acid if 12g of sodium bisulphate and 2.75g of hydrogen chloride were prepared in a reaction assuming law of conservation of mass is true?

Q-2) Carbon combines with hydrogen to form three compounds A, B and C. The percentage of hydrogen in A, B and C are 25, 14.3 and 7.7 respectively. Which law of chemical combination is illustrated?

Q-3) Boron has two isotopes boron-10 and boron-11 whose percentage abundances are 19.6% and 80.4% respectively. What is the average atomic mass of Boron?

Q-4) Calculate the mass of a single atom of Sulphur and a single molecule of CO₂.

Q-5) How many molecules of water and oxygen atoms are present in 0.9 g of water?

Q-6) What is the mass of 3.01×10^{22} molecules of ammonia?

Q-7) How many molecules and atoms of oxygen are present in 5.6 litres of oxygen at STP?

Q-8) 6g of carbon was completely burnt in oxygen. What would be the volume of CO₂ produced at STP and how many molecules would be present in that gas?

Q-9) 250 cm³ of sulphuric acid solution contain 24.5g H₂SO₄. If the density of solution is 1.98 g/cm³, determine : a) Molarity b) Molality.

Q-10) Concentrated aqueous Sulphuric acid is 98% H₂SO₄ by mass and has density of 1.84g/cm³. What volume of concentrated acid is required to make 5 litres of 0.5 M H₂SO₄?

Q-11) Calculate the mole fraction of Benzene (C₆H₆) which is 30% by mass in CCl₄.

Q-12) It is found that 16.50 g of metal combine with oxygen to form 35.6 g metal oxide. Calculate the percentage of metal and oxygen in the compound?

Q-13) Moth balls contain 93.71% carbon and 6.29% Hydrogen. If its molecular mass is 128 g/mol, calculate its molecular formula?

Q-14) Calculate the volume of CO₂ at STP evolved by strong heating of 20g calcium carbonate.

Q-15) Chlorophyll, the green colouring matter of plants contain 2.68% of magnesium by mass. Calculate the number of magnesium atoms in 3.00 g of chlorophyll.

Q-16) 250 cm³ of sulphuric acid solution contain 24.5 g of H₂SO₄. If the density of solution is 1.98 g cm⁻³, determine : i) molarity and ii) molality.

Q-17) A sample of NaNO₃ weighing 0.38 g is placed in a 50 mL volumetric flask . The flask is then filled with water to mark on the neck . What is the molarity of the solution.

Q-18) Calculate the mass of sodium acetate (CH₃COONa) required to make 500 mL of 0.375 M solution. Given that the molar mass of sodium acetate is 82.

Q-19) Calculate i) number of moles ii) no. of molecules iii) volume of gas at STP in 0.28 g of nitrogen.

Q-20) Calculate the mass percentage of each element present in ethanol.

Q-21) The density of 3 molal solution of NaOH is 1.110 g/L. Calculate the molarity the solution.

Q-22) If the elemental composition of butyric acid is 54.2% C, 9.2% H, 36.6% O and its molecular mass is 88u. What will be the molecular formula of compound ?

Q-23) A sample of NaOH weighing 0.38 g is dissolved in water and the solution is made to 50 mL in volumetric flask. What is the molarity of the resulting solution ?

Q-24) Calculate the molarity of pure water.

Q-25) A compound on analysis gave following percentage composition : C = 57.8%, H = 3.6 % and the remainder is oxygen. The vapour density of the compound is 83. Find the molecular formula of the compound.

Q-26) Calculate normality of solution containing 31.5 g hydrated oxalic acid in 1250 mL of solution.

PHYSICS

Numerical Problems on Kinematics

1. A train 100 m long is moving with a speed of 60 km h^{-1} . In what time shall it cross a bridge 1 km long? [68 s]
2. A swimmer's speed in the direction of the flow of the river is 16 km/h , against the direction of the flow of the river 8 km/h . Calculate the swimmer's speed in the still water and velocity of the flow of the river. [12 km/h, 4 km/h]
3. A train 110 m long is traveling at 60 km h^{-1} . In what time it will cross a cyclist moving at 6 km h^{-1} (a) in the same direction (b) in the opposite direction? [7.33s, 6 s]
4. The speed of a motor launch with respect to still water is 7 m/s and the speed of the stream is 3 m/s . When the launch began traveling upstream, a float was dropped from it. The launch traveled 4.2 km upstream, turn about and caught up with the float. How long is it before the launch reached the float? [35 min]
5. A gun is fired from a distance of 1.2 km from a hill. The echo of the sound is heard back at the same place after 8 second. Find the velocity of sound? [300 m/s]
6. Two cars A and B are at positions 100 m and 200 m from the origin at time $t = 0$. They start simultaneously with velocities 10 ms^{-1} and 5 ms^{-1} respectively. Determine the position and time at which they will overtake one another. Assume that they are moving in the same direction? [300 m, 20s]
7. A train which is 150 m long is moving due south at a speed of 10 ms^{-1} . A parrot flies at a speed of 5 ms^{-1} towards north parallel to the rail track. In what time the parrot shall cross the train? [10 s]
8. The motion of the car along y-axis is given by the relation $y = t^3 - 6t^2 + 9t + 5$, where y is in metre and t is in second. Calculate the position, acceleration and total distance traveled at $t = 5$ second? [25 m, 18 ms^{-2} , 28 m]
9. A motor boat has two throttle positions on its engine. The high speed position propels the boat at 30 km h^{-1} in still water and the low-speed position gives one-third the higher speed. The boat moves from its dock downstream on a river with the throttle at low-speed position and returns to the dock with throttle at high speed position. The return trip took 5% longer time that it did for the downstream trip. Determine the velocity of flow of river? [10.49 kmh^{-1}]
10. A ball is dropped from a height of 5 metre on a plane. On bouncing, it rises to a height of 1.8 metre. Calculate the fractional loss of velocity of ball. The value of g is not known? [0.4]
11. A body dropped from the top of a tower falls through 40 m during the last two second of its fall. What is the height of the tower? Given: $g = 10 \text{ m s}^{-2}$. [45 m]
12. A ball is dropped from a height of h meter above the ground and at the same instant another ball is projected upwards from the ground, the two balls meet when the upper ball

falls through a distance $h/3$. Prove that the velocities of the two balls when they meet are in the ratio 2:1.

13. A body describes 10 m in the third second of the motion and 28 m in the sixth second. What distance will be covered by the body in the seventh second of the motion? [34m]
14. The displacement of a particle moving in one dimension under the action of a constant force is related to time t by the equation $t = \sqrt{x + 3}$, where x is in meter and t is in second. Find the displacement of the particle when its velocity is zero. (zero)
15. A stone is dropped from a balloon at an altitude of 300 m. How long will the stone take to reach the ground if (a) the balloon is ascending with a velocity of 5 ms^{-1} (b) the balloon is descending with a velocity of 5 ms^{-1} (c) the balloon is stationary? [(a) 8.35s (b) 7.33 s (c) 7.8s]
16. A stone falls from a cliff and travels 34.3 m in the last second before it reaches the ground. Calculate the height of the cliff. [78.4m]
17. Two balls are thrown simultaneously, A vertically upwards with a speed of 20 m/s from the ground and B vertically downwards from a height of 40 m with the same speed and along the same line of motion. At what point do the two balls collide? ($g=9.8 \text{ m/s}^2$) [15.1 m above the ground]
18. A body traveling under uniform acceleration "a" covers distances S_1 and S_2 in consecutive time intervals t_1 and t_2 respectively. Prove that
- $$a = \frac{2 \left(\frac{S_2}{t_2} - \frac{S_1}{t_1} \right)}{t_1 + t_2}$$
19. The distance S along Z- axis varies with time as $S = 2t^3 + 3t^2 + 6t + 8$. Find the time t after which acceleration becomes zero. [Not possible]
20. A body is projected vertically upwards from A, the top of a tower. It reaches the ground in t_1 second. If it is projected vertically downwards from A with the same velocity, it reaches the ground in t_2 second. If it falls freely from A, prove that it would reach the ground in $\sqrt{t_1 t_2}$ second?

(Dimensional analysis)

- Let us consider an equation $\frac{1}{2} mv^2 = mgh$, where m is the mass of the body, v is the velocity, g is the acceleration due to gravity and h is the height. Check the correctness of the equation. [correct]
- Calculate the dimensional formula of ω from the following relation:

$$Y = a \sin(\omega t - kx)$$

Where the letters have their usual meanings. [$M^0L^0T^{-1}$]

3. Test the accuracy of the relation

$$\lambda = h/mv$$

where λ is the wavelength, h is the plank's constant, m is the mass and v is the velocity. [correct]

4. Test the accuracy of the relation $V = (\pi r^4)/(8\eta l)$, where V is the volume of the liquid flowing out of the capillary tube per unit time, η is the coefficient of viscosity, p is the pressure difference across the two ends of the capillary tube, r is the radius of the capillary tube and length of the capillary tube.[correct]

5. Time period of an oscillating drop of radius r , density ρ and surface tension S is

$$t = k \sqrt{\rho r^3/S}$$

check the correctness of the relation, where k is dimensionless. [correct]

6. Find the value of 60 joule/minute on a system which has 100g, 100 cm, and 1 min as the fundamental units. [2.16×10^6]

7. If the density of the mercury is 13.6 g cm^{-3} , convert its value into kg/m^3 using dimensional analysis. [13.6×10^3]

8. Obtain by the method of dimensional analysis an expression for the surface tension of the liquid rising in the capillary tube. Assume that the surface tension depends on mass m of the liquid, pressure P of the liquid and radius r of the capillary tube. The constant $K = \frac{1}{2}$. [$S = Pr/2$]

9. Assuming that the escape velocity for a planet depends upon gravitational constant G , radius R of the planet and also its density ρ , derive formula for the escape velocity from dimensional considerations. [$v_e = KR\sqrt{G\rho}$]

10. If the velocity of the sound in a gas depends upon its elasticity(E) and density(ρ), derive the relation for the velocity of the sound in a medium by the method of dimension.[$v = k\sqrt{E/\rho}$]

11. If $x = a + bt + ct^2$ where x is in meters and t is in seconds then what are the unites of a , b and c ?

12. Using principle of homogeneity of dimensions, check the correctness of the equation for height of liquid in a capillary $h = 2\sigma d/(r g \cos\theta)$

Where σ is surface tension, d is density, r is the radius and g is acceleration due to gravity. [incorrect]

13. If momentum (P), area (A) and time (T) are assumed to be the fundamental quantities, then energy has a dimensional formula. $[PT^{-1}A^{3/2}]$

14. If pressure $P = (a - t^2)/bx$, where x is the distance and t is time. What is the dimension of a/b . $[MT^{-2}]$

15. In a system of units, if force (F), acceleration (A) and time (T) are taken as fundamental unites, then what is the dimensional formula of energy? $[FAT^2]$

16. A force $F=at + bt^2$, where t is the time. What are the dimensions of a and b ? $[MIT^{-3}$ and $MLT^{-4}]$

17. If energy (E), velocity (V) and Time (T) are taken as fundamental unites, then what is the dimensional formula of surface tension? $[EV^{-2}T^{-2}]$

(Error Analysis)

1. Add 17.35 g, 25.6 g and 8.498 g.
2. Add 6.25×10^3 cm and 4.52×10^2 cm.
3. Subtract 36.8 km from 97 km.
4. Multiply 3.8 and 0.125 with due regard to significant figures.
5. The length, breadth and thickness of a rectangular sheet of metal are 4.234 m, 1.005 m and 2.01 cm respectively. Give the area and volume of the sheet to correct significant figures. $[8.72 \text{ m}^2, 0.0855 \text{ m}^3]$
6. Calculate the following with due regard for significant figures $(1.53 \times 0.9995)/ 1.592$. $[0.961]$
7. A capacitor of capacitance $C = 2.0 \pm 0.1 \mu\text{F}$ is charged to a voltage $V = 20 \pm 0.2$ volt. What will be the charge on the capacitor? Use $Q = CV$. $[40 \pm 2.4 \times 10^{-6} \text{ coulomb}]$
8. Find the relative error in Z if $Z = A^4B^{1/3}/CD^{3/2}$.

9. Calculate the maximum possible error in $Y = 4MgL/(\pi D^2 l)$ where mass, $M = 1000 \text{ g}$; original length $L = 200.0 \text{ cm}$; diameter $D = 0.075 \text{ cm}$; extension $l = 0.325 \text{ cm}$. [3.03%]
10. Using same vernier calipers, the length of a cylinder in different measurements to be 2.36 cm, 2.27 cm, 2.26 cm, 2.28 cm, 2.31 cm, 2.28 cm and 2.29 cm. Calculate the percentage error. [$\pm 0.9\%$]
11. The density of a material of a cylindrical rod was determined by the formula $d = m/\pi r^2 l$. The percentage error in m , r and l are 2%, 1.5%, and 0.8% respectively. Calculate the maximum possible percentage error in determination density. [5.8%]
12. Given : specific resistance, $\rho = \pi r^2 R/l$, where r is the radius of the wire, l is the length of the wire and R is the resistance of the wire. Calculate the percentage error in ρ , if $R = (64 \pm 2) \Omega$; $l = (156.0 \pm 0.1) \text{ cm}$; $r = (0.26 \pm 0.02) \text{ cm}$. [18.6%]
13. The heat dissipated in a resistance can be obtained by the measurement of the resistance, current and time. If maximum errors in the measurement of these quantities are 2%, 1%, and 1% respectively, then what is the maximum error in the measurement of dissipated heat, $Q = I^2 R t / 4.2 \text{ cal}$? [5%]
14. The length and breadth of a rectangle are 25.0 cm and 16.7 cm respectively. These have been measured to an accuracy of 0.1 cm. Determine the percentage error in the area of the rectangle. [1.0%]
15. A rectangular plate has a length of $(21.3 \pm 0.2) \text{ cm}$ and a width of $(9.80 \pm 0.10) \text{ cm}$. Calculate the area of the plate and also the percentage error. [$(209 \pm 4) \text{ cm}^2$, $\approx 2\%$]
16. An experiment measures quantities a , b , c , and X is calculated from the formula $X = ab^2/c^3$. The percentage error in a , b and c are $\pm 1\%$, $\pm 3\%$ and 2% respectively. What is the percentage error in X ? [$\pm 13\%$]
17. A physical quantity is represented by : $X = M^a L^b T^c$. If the percentage errors in the measurement of M , L and T are $\alpha\%$, $\beta\%$, $\gamma\%$ respectively, then what is the total percentage error in the measurement of the physical quantity? [$\alpha + \beta + \gamma$]
18. Given that $p = 13b^2t\sqrt{d}$. if the percentage errors of measurement in l , b , t and d are 1%, 2%, 4% and 8% respectively, then calculate the percentage error in p . Suppose, the calculated value of p is 5.3871, what is the maximum error in the value of p ? [15%, 0.808]
19. Given that the mass of a body is $(22.00 \pm 0.01) \text{ kg}$ and the volume is $(2.00 \pm 0.01) \text{ m}^3$. Find the percentage error in its density. [0.545%]

ACCOUNTS

Attempt the following Questions:

1. Show the effect of the following transactions on the accounting equation and prepare balance sheet of the last equation:

- i. Rakesh started business with cash 2,30,000, goods 1,00,000, and building 2,00,000.
- ii. He purchased goods for cash 50,000
- iii. He sold goods costing 20,000 for 35,000
- iv. He purchased goods from Rahul for 55,000
- v. He sold goods to Varun costing 52,000 for 60,000
- vi. He paid cash to Rahul in full settlement 53,000
- vii. Paid salary of 2,000
- viii. Received cash from Varun in full settlement 59,000
- ix. Rent outstanding 3,000
- x. Prepaid insurance 2,000
- xi. Commission received by him 13,000
- xii. amount withdrawn by him for personal use 20,000
- xiii. depreciation charge on building 10,000
- xiv. fresh capital introduced 50,000

2. Show the effect of the following transactions on the accounting equation

- i. started business with cash 50,000 and goods 20,000
- ii. bought goods for cash 15,000 and on credit 10,000
- iii. goods costing 24,000 sold at a profit of 33.5%, half payment received in cash.
- iv. Purchased furniture for office use 6,000 and household dues 4,000

3. Prepare accounting equation from the following:

- i. Started business with cash 75,000 and goods 25,000
- ii. Paid for rent 2,000
- iii. Bought goods for cash 30,000 and on credit 44,000
- iv. Goods costing 50,000 sold at a profit 25% out of which 27,500 received in cash
- v. Purchased a motorcycle for personal use 20,000

4. Prepare accounting equation from the following and prepare the balance sheet:
 - i. Raghu started business with cash 1,50,000
 - ii. Bought goods for 80,000 and on credit for 40,000
 - iii. Goods costing 75,000 sold at a profit of 33.5%, half the payment received in cash
 - iv. Goods costing 10,000 sold for 12,000 on credit
 - v. Paid for rent 2,000 and salary 4,000
 - vi. Goods costing 20,000 sold for 18,500 for cash
5. A firm earns a revenue of 27,000 and the expenses to earn this revenue is 15,000. Calculate its income.
6. Briefly explain Ind-AS
7. During the Accounting Period 2018 – 2019, Udit had total sales of 5,80,000, out of which cash sales were of 3,70,000. The total expenses for the year were 2,80,000 out of which 70,000 are still outstanding. Find out Udit's income for 2018 – 2019 as per:
 - a. Cash basis of accounting
 - b. Accrual basis of accounting
8. Calculate Total Equity if:
 - a. Owner's Equity in the beginning 2,00,000
 - b. Equity of Creditors at the end 60,000
 - c. Revenue during the period 1,20,000
 - d. Expenses during the same period are 70,000
9. Mukul commenced business on 1 st Apr'18 with a capital of 90,000 and loan of 30,000. He introduced additional capital of 15,000 and withdrew 7,000 for his personal use. He earned a profit of 18,000 for the year ending 31 st Mar'19. Calculate the Capital and the Total Assets of Mukul as on 31 st Mar'19.
10. How would you deal with the following items on accounting equation:
 - a. Outstanding Salary
 - b. Insurance Premium paid in advance
 - c. Rent Received in advance
 - d. Accrued Interest

BUSINESS STUDIES

PART-I

Do the following questions in assignment register as assignment no. 2- Forms of business organization

1. If two dacoits sign an agreement to operate together and share the loot, is it a partnership? Give reason.
2. 'Arora brothers is a firm formed for construction of a shopping mall'. Identify this type of partnership.
3. Name the basic document prepared in partnership firm. Write it's any four contents.
4. Who are co-parceners?
5. What happens to JHF business if karta dies?
6. When can a public company commence business?
7. Who manages and controls the affairs of the company?
8. Name the type of company which cannot invite public to subscribe to its share capital.
9. Name the cooperative society set up to make residential accommodation available to its members at lower cost.
10. Why the size of sole proprietorship generally remains small?
11. Why company is called an artificial person?
12. What is plant layout?
13. There are eight members in a private company, all of them are sailing in a boat and are on a sightseeing trip. All of a sudden a storm starts blowing and all of them die. Will their company become non-existent with their death? Give reason.
14. Rohit, mohit, anav and divya are partners a firm performing different roles. Rohit has contributed capital and participates in the management of firm. He shares profit and losses and is liable to an unlimited extent to the creditors of the firm.
Mohit has contributed capital and shares profit and losses. But he does not take part in day-to-day activities of business.
Anav 's association with the firm is unknown to general public but in all other respects he is like an active partner.

Divya has allowed the firm to use her name as she enjoys good reputation, but she does not either contribute capital or take part in management.

Identify the four types of partners highlighted above by quoting the lines from the above.

15. You are a student of class xii having full knowledge of different forms of business organization. Mr. Rohan wants to set up a business. He needs your help in choosing a business organization. He has two main expectations from the business organization:

- Ease of formation and closure
- Secrecy

16. Compare all the forms of business organization on the following basis;

- Formation
- Number of members
- Liability of members
- Control and management
- Secrecy
- Continuity

17. Siddhant visited his native village during his vacations and found that the moneylender in the village was exploiting the farmers. So he decided to help the farmers. He met all the farmers and told them about the various options for raising funds. He was able to convince the farmers to pool their own resources and form an organization. The purpose of opening such organization was not to make profits but to provide help to members.

- Name the form of organization opened by farmers.
- Who can become the members of the above identified organization?
- What is the motive of this kind of organizations?
- What is the minimum number of members required to form such organization?
- Under which act, these organizations are governed?
- Is registration compulsory for these organizations?

PART-II

Prepare a pictorial A4 size sheet on 'emerging modes of business or e-business.

HISTORY

PROJECT WORK IN HISTORY FOR CLASSES XI AND XII

History is one of the most important disciplines in school education. It is the study of the past, which helps us to understand our present and shape our future. It promotes the acquisition and understanding of historical knowledge in breadth and in depth across cultures. The course of history in senior secondary classes is to enable to students to know that history is a critical discipline, a process of enquiry, a way of knowing about the past rather than just a collection of facts. The syllabus helps them to understand the process, through which a historian collects, chooses, scrutinizes and assembles different types of evidences to write history. The syllabus in class-XI is organized around some major themes in world history. In class XII the focus shifts to a detailed study of some themes in ancient, medieval and modern Indian history. CBSE has decided to introduce project work in history for classes XI and XII in 2013-14 as a part of regular studies in classroom, as project work gives students an opportunity to develop higher cognitive skills. It takes students to a life beyond text books and provides them a platform to refer materials, gather information, analyze it further to obtain relevant information and decide what matter to keep and hence understand how history is constructed

OBJECTIVES:- Project work will help students:-

- To develop skills to gather data from a variety of sources investigate diverse viewpoints and arrive at logical deductions.
- To develop skills to comprehend, analyze, interpret, evaluate historical evidence and also understand the limitations of historical evidence.
- To develop 21st century managerial skills of co-ordination, self-direction and time management.
- To give a multidisciplinary approach to topics.
- To learn to work on diverse cultures, races, religions and lifestyles.
- To learn through constructivism a theory based on observation and scientific study.
- To inculcate a spirit of inquiry and research.
- To communicate data in the most appropriate form using a variety of techniques.
- To provide greater opportunity for interaction and exploration.
- To understand contemporary issues in context to our past.

ASSESSMENT

ALLOCATION OF MARKS (20)

The marks will be allocated under the following heads:

Project synopsis	2 Marks
Data/Statistical analysis/Map work	3 Marks
Visual/overall presentation	5 Marks
Analysis/explanation and interpretation	5 Marks
Bibliography	1 Marks
Viva	4 Marks

TOTAL 20 MARKS

THEMES IN WORLD HISTORY

Topics:

- Evolutionary aspect of human beings.
- The Legacy of Mesopotamia civilization with special reference town planning, Script and Writing system, Mathematics, Astronomy, Science and their calendar.
- The Roman Empire with special reference to Architecture, government and society.
- The Islamic Land with special focus on religion, politics and their contribution to the world.
- Role of Genghis Khan in establishing nomadic empire.
- Europe from 13th to 16th century.
- European voyages and explorations.
- The great American civilizations- Incas, Aztecs and Mayan civilizations.
- Case study on China and Japan. (Path to modernization)
- Anthropological Research based on Darwin's Theory
- Critique of the industrialization in Britain
- Relations and impacts of past crusades
- Making and unmaking of Mesopotamia

- Paradigms of Greco-Roman civilization
- Aspirations of women in Renaissance period
- An Exploratory study into Humanism
- Piecing together the past of Genghis Khan
- An in depth study into “now and then” paradigm of Christianity
- An exploratory study into the realism and the transmission of Humanistic ideas
- Scientific Revolution and the origins of modern science
- An exploratory study into the making of America
- Myriad Realms of Slavery in ancient, medieval and modern world
- Learning about global Sufism
- History of aborigines – America / Australia

NOTE:

- The project work to be done in group of five.
- Each group to select one topic.
- Each student to have a separate project file.
- The project should be minimum of 40-50 pages each.
- Use colorful sheets for the work and spiral binding.
- Each group has to prepare Power point presentation related to their topic.
- The groups can present role play, drama, songs, bulletin board, poem related to the topic.
- The project should be totally research and survey based.
- The project must be neat and well presented and must be completely handwritten.
- The topic and the group members must be first approved by the teacher.
- The project should be done on inter leaf A-4 sized sheets.
- Students have to preserve the initial draft of the project as well as any research papers that they may have used. (To be attached at the end of the project)
- Revise and write all the assignments of the chapters done in the class.
- Prepare Power Point Presentation of the chapters allocated to the Groups.
- Revise and practice the map work done in the class.

FINAL PRESENTATION/LAYOUT OF THE PROJECT

<p>Section 1: History Project (Title of the Project)</p> <p>Name: School: Year: Roll no.:</p>	<p>Section 2: Certificate of authenticity (To be pasted)</p> <p style="text-align: center;">Teacher's Signature</p>	<p>Section 3: Index</p>
<p>Section 4: Acknowledgement (Acknowledging the institution , the place visited and the person who has helped.)</p>	<p>Section 5: Preface: Problem Statement/Objective of the project</p>	<p>Section 6: Introduction: (Objective/learning outcomes of the project. Introduce the selected topic by giving some historical background)</p>
<p>Section 7: Summary of the topic Activities done during the project</p>	<p>Section 8: Observations and Analysis</p>	<p>Section 9: Conclusion Summarized suggestions of findings/Future scope of study</p>
<p>Section 10: Appendix Person consulted, Bibliography, Books, Websites, Films/ Television referred.</p>	<p>Section 11: Values and Life skills learned through the project</p>	<p>Section 12: Draft Thank you.</p>

Note : collect the information for research from the following websites-edu, gov and org. Use search engines for quick response – Google, Bing, Yahoo, Ask.com, Aol.com, Baidu, Duck DuckGo etc.

- Read all the chapters and underline the difficult words and write there meanings in the book itself.

- Paste all the sources in a separate notebook and frame the questions related to the sources.
- Do the Map items enlisted below.
 1. All the continents of the world.
 2. All the water bodies { seas and oceans } of the world.
 3. Countries like India UK,USA, Mexico, Brazil Ecuador, Argentina, Chile Peru, Canada, China, Japan, Taiwan, Spain, Portugal, Germany, France, Italy, Mongolia, Turkmenistan, Turkey, Syria, Iran Iraq, Saudi Arabia, Yemen, Afghanistan Kirgizstan. (Mark the countries separately according to their continents with their capital.

GEOGRAPHY

1. Complete all the assignments and important questions given with each chapter.
2. Prepare chapters 1,9,10 from Indian Constitutionalism at work (textbook for class 11 NCERT) for cycle test-1 to be held in July 2019.
3. (I) ***Project to be prepared for internal assessment.***
 - (II) Any 1 topic from the following:
 1. ***Challenges to environment*** w.r.t various case studies (for e.g.: Sardar Sarovar dam case study, South Delhi's Chipko-like movement and so on)
 2. ***Rights in the Indian Constitution*** (are the Rights being implemented? - like Right to equality, freedom of speech and expression etc)
 3. ***Election and representation***- 2019 General elections (Role of election commission, recent controversies)
 4. Critically analyse ***Sabrimala Verdict of Supreme Court*** (focus from the point of view of religion, women rights, dissenting statement of Justice Indu Malhotra, role of Indian judiciary)
 5. Controversies related to ***Article 370*** and suggest remedies. (should it be removed or not, opinions of various political parties on it)

IMPORTANT:

1. Complete research related to the topic, no plagiarism, references/bibliography must be given at the end of the project.

POLITICAL SCIENCE

1. Complete all the assignments and important questions given with each chapter.
2. Prepare chapters 1,9,10 from Indian Constitutionalism at work (textbook for class 11 NCERT) for cycle test-1 to be held in July 2019.
3. (I) ***Project to be prepared for internal assessment.***
(II) Any 1 topic from the following:
 1. ***Challenges to environment*** w.r.t various case studies (for e.g.: Sardar Sarovar dam case study, South Delhi's Chipko-like movement and so on)
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IMPORTANT:

1. Complete research related to the topic, no plagiarism, references/bibliography must be given at the end of the project.

ECONOMICS

Very Short Answer Type

- Q1. How will you choose which wants to be satisfied first?
- Q2. Who is a service provider?
- Q3. Would it be termed as statistics if said that population of a country is 120 crores and why?
- Q4. What is meant by statistical tools?
- Q5. In which type of data, precaution is highly required?

Q6. In a village of 200 farms, a study was conducted to find the cropping pattern. Out of the 50 farms surveyed, 50% grew only wheat. Identify the population and the sample here.

Q7. Out of primary and secondary data, which one is collected for definite purpose?

Short Answer Type

Q1. Explain the welfare definition of economics.

Q2. Discuss the three main economic activities.

Q3. Discuss the importance of statistics in economic planning.

Q4. Discuss the limitation of statistics.

Q5. Explain “Distrust of Statistics”.

Q6. What is meant by statistical errors? Which factors give rise to statistical errors?

Q7. Explain briefly the method of collecting data through mailed questionnaire.

Q8. Write a short note on Census Of India and NSSO.

Q9. Differentiate between Census method and Sampling Method.

हिंदी

1 भक्तिकालीन संत व कवि 'कबीर' के जीवन परिचय से संबंधित परियोजना कार्य तैयार कीजिए।

2 कबीर के पाद्य-पुस्तक से भिन्न किन्हीं पाँच पदों का संकलन कीजिए तथा उसकी प्रासंगिकता लिखकर अपना विचार लिखिए।

3 अवकाश में आपने जो सृजनात्मक कार्य किया उसकी सूची तैयार कीजिए तथा उससे दूसरे व्यक्ति को क्या लाभ हुआ उसे रेखांकित कीजिए।

4 आप अपने जीवन के उद्देश्य को अपने शब्दों में लिखिए।