

HOLIDAY HOMEWORK (2019-20)
CLASS XI

ENGLISH (301)

Instructions regarding Holiday homework :

- Students will have to read newspaper daily during summer holidays.
- Then, they will find any enthralling article/report/editorial content which amused them the most.
- Students will paste that content in their class notebook and will write about their opinion/views/alikeness/unlikeness about it.
- Next, they will record that selected write up in their voice and e-mail/ WhatsApp to their subject teacher.
- Recording should be of 3-4 minutes.
- The Pasted news should be original not photocopied.

PHYSICS (042)

- Q.1. Define fundamental forces in nature. Arrange these forces in their order of increasing strength.
- Q.2. How is physics related to society?
- Q.3. Write down some advance inventions in physics. Who discovered the following (i) Absolute temperature (ii) Quantum theory of radiation
- Q.4. Which of these is largest astronomical unit, light year and parsec.
- Q.5. Name various systems of units and discuss them briefly.
- Q.6. The Sun's angular diameter is measured to be 1920". The distance of the sun from the earth is $1.496 \times 10^{11} \text{m}$. What is the diameter of the Sun ?
- Q.7. Explain the applications and limitations of dimensional analysis.
- Q.8. Convert 1 joule into ergs.
- Q.9. Assuming that the mass 'm' of the largest stone that can be measured by a flowing river depends on velocity 'v' of water, its density 'd' and acceleration due to gravity 'g'. Show that the mass varies directly as the sixth power of velocity of flow.
- Q.10. Write the dimensions of a/b in the relation: $P = (a-t^2)/bx$. Where 'P' is the pressure, 'x' is the distance and 't' is the time.
- Q.11. The escape velocity from the surface of the earth is given by $v = \sqrt{2GM/R}$, where m is the mass, R is the radius of the earth. Check the correctness of the given formulae.
- Q.12. Write the dimensions of stress, universal gravitational constant, surface tension, impulse, thrust, pressure, work, angular momentum, power, coefficient of viscosity.
- Q.13. Draw Position – time graph and Velocity – time graph with positive acceleration, negative acceleration and zero acceleration.
- Q.14. Write the dimension of a and b in the relation $P = \frac{b-x^2}{at}$ where P is power, x is distance and t is time.
- Q.15. Pressure is defined as momentum per unit volume. Is it true?
- Q.16. A person travels along a straight road for the first half length with a velocity v_1 and the second half length with velocity v_2 , what is the mean velocity of the person?
- Q.17. Define relative velocity of an object w.r.t. another. Draw position time graphs of two objects moving along a straight line, when their relative velocity is (i) zero (ii) non-zero.
- Q.18. A ball thrown vertically upwards with a speed of 19.6m/s from the top of a tower returns to the earth in 6 second. Find the height of tower.

Q.19. Derive the equations of uniformly accelerated motion in one dimension by calculus method.

(i) $v=u+at$ (ii) $s=ut+\frac{1}{2}at^2$ (iii) $v^2 = u^2 + 2as$

Q.20. The position of an object moving along x-axis is given by $x=a+bt^2$, where $a=8.5\text{m}$ and $b=2.5\text{ m/s}^2$ and t is measured in seconds. What is the velocity at $t = 0$ sec and $t = 2$ sec? What is the average velocity between $t=2$ sec and $t = 4$ sec.

CHEMISTRY(043)

General Instructions:-

1. A copy of this assignment should be pasted in the classwork register.
2. All the questions should be solved in the register.
3. Write all the formulae and significance of each term involved for chapters – Basic concepts of chemistry, Hydrogen and Environmental chemistry. Also learn these chapters. **1. Some**

basic concepts of chemistry - Objective Questions:

1. A measured temperature on Fahrenheit scale is 200°F . What will this reading be on Celsius scale?
(a) 40°C (b) 94°C (c) 93.3°C (d) 30°C
2. The empirical formula and molecular mass of a compound are CH_2O and 180 gm respectively. What will be the molecular formula of compound?
(a) $\text{C}_9\text{H}_{18}\text{O}_9$ (b) CH_2O (c) $\text{C}_6\text{H}_{12}\text{O}_6$ (d) $\text{C}_2\text{H}_4\text{O}_2$
3. Which of the following term is unitless?
(a) Molarity (b) Molality (c) Mole fraction (d) Normality
4. Which of the following methods of expressing concentration are independent of temperature?
(a) Molarity (b) Molality (c) Mole fraction (d) Normality
5. AZT is used for victims for
(a) Cancer (b) AIDS (c) Typhoid (d) Tuberculosis
6. Elements which possess characteristics of metals as well as non-metals are called
(a) Gun metal (b) Metalloids (c) Meteoroids (d) Lanthanoids
7. A, E, M and n presents atomic weight, equivalent weight, molecular weight and valency of an element. The correct relation is
(a) $A=E \times n$ (b) $A=M/E$ (c) $A=M/n$ (d) $M=A \times n$
8. What is the mass percentage of carbon in carbon dioxide?
(a) 0.034% (b) 27.27% (c) 3.4% (d) 28.7%
9. Two oxides of a metal contains 36.4% and 53.4% of oxygen by mass respectively. If the formula of first oxide is M_2O . Then the formula of second oxide is
(a) M_2O_3 (b) MO (c) MO_2 (d) M_2O_5
10. The total number of electrons in 18 ml of water (density = 1g/ml) is
(a) 6.02×10^{23} (b) 6.02×10^{25} (c) 6.02×10^{24} (d) $6.02 \times 18 \times 10^{23}$

2. Hydrogen- Objective Questions:

1. Hydrogen resembles halogens in many respect for which several factors are responsible. Of the following factors which one is most important in this respect?
(a) its tendency to lose an electron to form a cation.
(b) Its tendency to gain a single electron in its valence shell to attain stable electronic configuration.
(c) Its low negative electron gain enthalpy value. (d) Its small size.
2. Why does H^+ ion always get associated with other atoms or molecules?
(a) Ionisation enthalpy of hydrogen resembles that of alkali metals.
(b) Its reactivity is similar to halogens.
(c) It resembles both alkali metals and halogens.
(d) Loss of an electron from hydrogen atom results in a nucleus of very small size as compared to other atom or ions. Due to small size it can not exist free.

3. Radioactive elements emit α , β and γ -rays and are characterised by their half lives. The radioactive isotope of hydrogen is

- (a) Protium (b) deuterium (c) tritium (d) hydronium

4. Hydrogen can be prepared by the action of dil H_2SO_4 on

- (a) Copper (b) Iron (c) Lead (d) Mercury

5. Which of the following pairs of substances on reaction will not evolve H_2 gas?

- (a) Fe and H_2SO_4 (aqueous) (b) Copper and HCl (aqueous)
(c) Sodium and ethyl alcohol (d) Iron and steam.

6. Hydrogen combines with other elements by

- (a) losing an electron (b) Gaining an electron.
(c) Sharing an electron. (d) Losing, gaining and sharing of an electron.

Environmental chemistry-Objective questions

1. The gaseous envelop around the earth is known as atmosphere. The lowest layer of this is extended upto 10 Km from sea level. This layer is

- (a) Stratosphere (b) Troposphere (c) Mesosphere (d) Hydrosphere

2. The pollutants which come directly in the air from sources are called primary pollutants. Primary pollutants are sometimes converted to secondary pollutants. Which of the following belongs to secondary air pollutants?

- (a) CO (b) Hydrocarbon (c) Peroxyacetyl nitrate (d) NO

3. Photochemical smog occurs in warm, dry and sunny climate. One of the following is not amongst the components of photochemical smog. Identify it.

- (a) NO_2 (b) O_3 (c) SO_2 (d) Unsaturated hydrocarbons

4. Which of the following statements about photochemical smog is wrong?

- (a) It has high concentration of oxidising agents.
(b) It has low concentration of oxidising agents.
(c) It can be controlled by controlling the release of NO_2 , hydrocarbons, ozone, etc.
(d) Plantation of some plants like pinus helps in controlling photochemical smog.

5. The smog is essentially caused by the presence of

- (a) O_2 and O_3 (b) O_2 and N_2 (c) Oxides of sulphur and nitrogen (d) O_3 and N_2

6. Which of the following is not a greenhouse gas?

- (a) Methane (b) Ozone (c) Carbon dioxide (d) Nitrogen

7. Which of the following statement is correct

- (a) Ozone hole is a hole formed in stratosphere from which ozone oozes out.
(b) Ozone hole is a hole formed in troposphere from which ozone oozes out.
(c) Ozone hole is thinning of ozone layer of stratosphere at some places
(d) Ozone hole means vanishing of ozone layer completely.

BIOLOGY (044)

Q.1 Prepare an investigatory project on any one of the following topics: -

- a) diabetes and its prevention
b) Public health and hygiene
c) drug addiction and drug abuse
d) obesity and health risk
e) nutritional aids
f) air pollution and its effects

MATHEMATICS (041)

1. Write the following sets in the roster form.

- a) $A = \{x : x^2 + x, x \in \mathbb{R}\}$ b) $F = \{x : x^4 - 5x^2 + 6 = 0, x \in \mathbb{R}\}$

2. If $L = \{1,2,3,4\}$, $M = \{3,4,5,6\}$ and $N = \{1,3,5\}$ then verify that $L - (M \cup N) = (L - M) \cap (L - N)$.
3. Using Venn Diagram, for all sets A, B and C. Show that $A - (B - C) \neq (A - B) - C$.
4. In a group of 50 students, the number of students studying French, English, Sanskrit were found to be as follows:
 French = 17, English = 13, Sanskrit = 15, French and English = 9, English and Sanskrit = 4, French and Sanskrit = 5, French, English and Sanskrit = 3. Find the number of students who study:
 i) only French ii) only English iii) only Sanskrit iv) English and Sanskrit but not French v) French and Sanskrit but not English vi) French and English but not Sanskrit vii) at least one of the three languages. viii) None of the three languages.
5. Express each of the following by means of Venn Diagrams
 i) $(A \cup B) \cap C$ ii) $(A \cap B) \cap C$ iii) $A - B$ iv) $B - A$
6. If $a + ib = \frac{c+i}{c-i}$ where c is real, prove that $a^2 + b^2 = 1$ and $\frac{b}{a} = \frac{2c}{c^2 - 1}$.
7. If $f(z) = z^4 + 9z^3 + 35z^2 - z + 4$. Find $f(-5 + 2\sqrt{-4})$.
8. Express $\frac{1}{1 - \cos\theta + 2\sin\theta}$ in the form of $a + ib$.
9. If $\left(\frac{1-i}{1+i}\right)^{100} = a + ib$, then find (a, b).
10. If $\frac{(a^2 + 1)^2}{2a - i} = x + iy$, then what is the value of $x^2 + y^2$.
11. If $A = \{x: x \in W, X < 2\}$, $B = \{x: x \in N, 1 < x < 5\}$ and $C = \{3, 5\}$, then find:
 a) $A \times (B \cap C)$ b) $A \times (B \cup C)$
12. Find the domain of each of the following functions:
 i) $y = \frac{x^2 - 1}{x - 1}$ ii) $y = \frac{5 - x}{x - 5}$ iii) $y = \frac{2x - 3}{(x + 1)(x - 1)}$
13. Find the range of the following functions given by:
 i) $f(x) = |x - 3|$ ii) $f(x) = \frac{3}{2 - x^2}$
14. If $f(x) = \frac{x - 1}{x + 1}$ then show that $f\left(\frac{1}{x}\right) = -f(x)$ and $f\left(\frac{-1}{x}\right) = \frac{-1}{f(x)}$.
15. If $f(x) = \frac{1}{1 - x}$, show that $f(f(f(x))) = x$.
16. Solve for x:
 a) $2x^2 + 3ix + 2 = 0$ b) $x^2 - (5 + \sqrt{2})x - 5\sqrt{2} = 0$ c) $2x^2 - (2 + 3i)x + (2 + 4i) = 0$
17. Find the square roots of the following:
 i) $-6 - 8i$ ii) $7 - 24i$
18. Find the modulus and argument of the following complex numbers and hence convert in polar form:
 i) $z = \frac{-16}{1 + i\sqrt{3}}$ ii) $z = \frac{1 + 7i}{(2 - i)^2}$
19. Find the value of x and y if i) $\frac{x - 1}{3 + i} + \frac{y - 1}{3 - i} = i$ ii) $\frac{(1 + i)x - 2i}{3 + i} + \frac{(2 - 3i) + i}{3 - i} = i$
20. What is the conjugate of $\frac{2 - i}{(1 - 2i)^2}$?
21. Given $A = \{-1, 0, 2, 5, 6, 11\}$, $B = \{-2, -1, 0, 18, 28, 108\}$ and $f(x) = x^2 - x - 2$. Find $f(A)$. Is $f(A) = B$?

ACCOUNTANCY (055)

Do the following questions in your subject note book.

Q1. What types of transactions we record in the books of account?

Q2. Which of the following is not a business transaction?

- (a) Bought furniture for personal use of Rs. 5,000.
- (b) Bought furniture of Rs. 5,000 for business.
- (c) Paid for salaries of employees Rs. 5,000.
- (d) Paid rent for office building of Rs. 1,000.

Q3. Mr. Abhinav started a business of buying and selling of mobile phones and invested Rs. 2,00,000 on 01.04.2016. On 20.04.2016 he paid Rs.1,00,000 for the purchase of mobile phones and Rs. 50,000 for furniture. On 01.05.2016, he purchased some stationery for Rs.5,000 in cash and sold some mobile phones for Rs.50,000 on credit to Mr. Akash. After a period of one month, he purchased mobile phones for Rs.60,000 from Mr. Satish. Expenses during the same period were Rs.10, 000. On 31.07.2016 mobile phones worth Rs.20,000 were lost by fire.

During September 2016 to December 2016, a part of stock of mobile phones which costed Rs.30,000 was sold for Rs. 40,000.

With the help of the above information, answer the following questions:-

- (i) What is the amount of capital with which Mr. Abhinav started the business?
- (ii) What is the total amount of expenses?
- (iii) Who is the debtor for the business and what is the amount receivable from him?
- (iv) Who is the creditor and what is the amount payable to him?
- (v) What is the total value of goods purchased?

Q4. Amar commenced business with a capital of Rs. 75,000 on 1st April 2006. The various transactions that took place during the year were as follows:-

- (i) Purchased machinery worth Rs.7,000 for office use.
- (ii) Bought machinery for Rs.10,000.
- (iii) Purchased goods from Jitinder for Rs.5,000.
- (iv) Purchased goods from Hari in cash Rs.8,000.
- (v) Sold goods (costing Rs.4,000) at a profit of 25% on cost.
- (vi) Withdrew cash for private use Rs.2,000.
- (vii) Deposited into bank account Rs.1,000.
- (viii) Expenses paid Rs 2,000

Prepare an accounting equation to give effect to the above transactions.

Q5. (a) Mohan started business on 01.04.2016 with capital of Rs.1,50,000 and a loan of Rs.40,000 taken from Punjab National Bank. On 31.03.2017, his assets were Rs.3,00,000. Find out his capital on 31.03.2017 and profit made or loss incurred during the year 2017.

(b) If the above illustration, Mohan had introduced additional capital of Rs.25,000 and had withdrawn Rs.8,000 for personal purposes, find out profit or loss.

Q6. Give one example each of the following effects:-

- (i) Increase in assets, Increase in liabilities.
- (ii) Increase in assets, Decrease in assets.
- (iii) Increase in liability, Decrease in capital.
- (iv) Decrease in assets, Decrease in liabilities.
- (v) Increase in assets, Increase in capital.

Q7. Define the following terms:-

- (i) Trade Payables
- (ii) Trade Receivables
- (iii) Stock
- (iv) Purchase Return.

Q8. Calculate the amount withdrawn by Suresh and total assets in the following case:-

Suresh started business with a cash of Rs.2,00,000 as on 1st April 2010. During the year, he suffered

a loss of Rs.20,000. On 31st March,2011 his capital stood at Rs.1,20,000, Bills payable at Rs.10,000 and bank Loan Rs.8,000. He also introduced a fresh capital of Rs.10,000 during the year and he had a bank overdraft of Rs. 6,000 on 31st March 2011.

Q9. Shyam started a business with a capital investment of Rs.20,00,000 as on 1st April, 2010. On 15th April 2010 he took a loan of Rs.5,00,000 and invested this amount into the business. On 1st May 2010 he introduced additional capital of Rs.10,000. He suffered a loss of Rs.10,000.

Cash withdrawn by businessman Rs.20,000. Calculate the amount of total assets and capital as on 31st March 2011.

Q10. Identify the Accounting Assumption or Accounting Principle involved in each of the following situations:-

- (i) A transaction is recorded in the books when it is entered into and not when the settlement takes place.
- (ii) Provision is made for all known liabilities and losses.
- (iii) Economic life of an enterprise is split into periodic intervals.
- (iv) Expenses incurred in an accounting period should be matched with the revenues recognized in that period.
- (v) Only those items should be disclosed that have significant effect or are relevant to the users.

ECONOMICS(030)

STATISTICS

Activity

Prepare a sample questionnaire of Consumer Eating Preferences/Consumer Awareness Amongst Household Articles/Mobile Phone Network Service Providers with at least 10 questions in it. Perform this survey with 10 different people and record the differences of preferences using statistical tools. Also add conclusion at the end of report.

MICROECONOMICS

Do the following questions in your subject note book.

- Q1. What is the opportunity cost of an input which has no alternative use?
- Q2. Utility is directly link with the usefulness of a commodity. Is it true and false give reasons?
- Q3. Explain the properties of PPC.
- Q4. Both micro economics and macro economics have same degree of aggregation. Defend or refute.
- Q5. Production in an economy is below its potential due to unemployment. Government starts employment schemes. Explain its effect using PPC?
- Q6. A consumer consumes only two goods X and Y and is in equilibrium. Price of good X falls. Show that it will lead to rise in demand for good X.
- Q7. India is a labour abundance and capital scarce economy. Which technique of production should be used to produce the commodity?
- Q8. In order to encourage tourism in Goa, Indian Airlines reduces the airfare to Goa. How will it affect market demand curve for air travel to Goa?

BUSINESS STUDIES(054)

Activity

During summer break the student will visit to any Mall in the city with their parents and make a project report/observation report (consisting 10-12 pages) which must include :

- Number of floors, shops occupied and unoccupied
- Nature of shops, their ownership status
- Nature of goods dealt in; local brands, International brands
- Rented spaces, owned spaces
- Different types of promotional schemes

- Most visited shops
 - Special attraction of the mall- Food court, gaming zone or cinema etc.
 - Innovative facilities
 - Parking facilities etc.
- Student may add any other relevant information to their report and will submit after summer break.

Do the following questions in your subject note book.

1. Mukul produces goods, but all the goods are used by him for personal consumption and not even a single good is sold in the market. Will it be considered a business activity? Give reason.
2. Ved has allowed Shrey and Gaurav for using his name for the sports equipment manufacturing unit recently promoted by them as partners. But, Ved will not take active part in managing the firm and neither share its profit or losses.
 - a) Will Ved be considered as a partner in the firm? Explain.
 - b) Also, comment upon the kind of liability Ved will have to assume under such circumstances.
3. Reema bought a new house recently. She plans to shift there in near future. Therefore she is selling off her old kitchen appliances at OLX and has also made some profit in the process. In context of the above case:
 - i) Will this transaction be constituted as a business activity? Why or why not?
 - ii) Mention the underlying characteristic of business.

SOCIOLOGY (039)

Q. 1 PREPARE A PROJECT FILE ON THE FOLLOWING TOPICS:

1. Social research on Objectivity and subjectivity playing a vital role in Indian sociology.
2. Submit a report on Anthropology and Field work done by different Anthropologist.
3. Case study on surveys and their importance in sociology.
4. Case study on Interview and their advantages and disadvantages in our society.
5. Social research on Indian Population.
6. Submit a social research on Sociologist and their field work.
7. Case study on different type of Observation and their importance in sociology.

POLITICAL SCIENCE (028)

Q.1 PREPARE A PROJECT FILE ON THE FOLLOWING TOPICS:

1. Judicial Activism – two case studies in which the Judiciary has safeguarded the environment or human rights.
2. Public accountability of Civil Servants in India –Is it a myth or a reality?
3. Party System in India – changing phases.
4. Examine one Supreme Court case dealing with Fundamental Rights. Identify the issues of the case and analyse the final ruling.
5. Role of Local Self Government institutions in women empowerment.
6. Explore the controversies around the development of a Uniform Civil Code mentioned in the Directive Principles.
7. Identify and explain the electoral reforms that are urgently needed in India.
8. Discrimination faced by a girl child.
9. Right to Education: To what extent has it benefited the slum children?
10. Role of National Human Rights Commission in safeguarding the rights of the under-privileged.

INFORMATICS PRACTICES (065)

Q.1 Write the answer for the following questions.

- 1 GB=_____ byte.
- Write two similarities and two differences between Compiler and Interpreter.
- Name the basic units of a computer system.
- Name some fast storage devices.

Q.2 Explain the following functions with syntax, purpose and example.

- | | | | |
|--------------|-------------|--------------|--------------|
| a) CONCAT() | b) SUBSTR() | c) TRIM() | d) SQRT() |
| e) MID() | f) MOD() | g) POW() | h) ROUND() |
| i) CURDATE() | j) NOW() | k) SYSDATE() | l) DAYNAME() |

Q.3 Write SQL queries for (a) to (g) and output for (h) to (i) on the basis of given table (Club).

TABLE:CLUB

COACH_ID	COACH	AGE	SPORTS	DATEOFAPP	PAY	SEX
1	KUKREJ	35	KARATE	27/3/1996	1000	M
2	RAVINA	34	KARATE	20/01/1998	NULL	F
3	KARAN	34	SQUASH	19/02/1998	2000	M
4	TARUN	33	SWIMMING	01/01/1998	1500	M
5	ZUBIN	36	SWIMMING	12/01/1996	750	M

- To show all information about the swimming coaches in the club.
- To list names of all coaches with their date of appointment in descending order.
- To display coach name, age and Dateofapp who are not getting pay.
- To display CoachName and pay of coaches whose pay is greater than 1000.
- To display details of coaches whose sports is Karate and age is greater than 34.
- To display all details of those coaches who don't have their pay in range of 1500 to 4000.
- To display the names of members whose name starts with "k".
- Select DISTINCT(sports) from Club;
- Select SUM(Pay) from Club where dateofapp > '1996-05-01';
- Select Min(age) from Club;

PHYSICAL EDUCATION (048)

Q.1- Write benefits and paste pictures of following Asanas-

- | | | |
|------------|--------------|------------------|
| a) Tadasna | b) Padmasana | c) Shashankasana |
|------------|--------------|------------------|

Q.2- Paste pictures of various adventure sports-

- | | | |
|-------------------|-------------|------------------|
| a) Rock Climbing | b) Trekking | c) River Rafting |
| d) Mountaineering | e) Surfing | f) Para Gliding |

Q.3- Prepare practical record file according to prescribed syllabus.

Q.4- Do complete assignment questions of chapter 1 to 4.

FASHION STUDIES (053)

- Do the following questions in their respective portfolio.
 - Make any product of textile swatch.
 - Make any design inspired from nature.

NOTE: PREPARE JULY PERIODIC SYLLABUS FOR TEST IN ALL SUBJECTS