



St. Mary's School, Dwarka
Holiday Homework
Std. XII
Week 1
Worksheet 1

Subject: English

General Instructions:

- 1) The work should be done neatly and in a systematic way.
- 2) The given questions are to be done in the English notebook.
- 3) Attempt questions based on specific instructions for each section.

Q1. Read the following passage carefully.

1. Faith in progress is deep within our culture. We have been taught to believe that our lives are better than the lives of those who came before us. The ideology of modern economics suggests that material progress has yielded enhanced satisfaction and well-being. But much of our confidence about our own well-being comes from the assumption that our lives are easier than those of earlier generations.
2. The lives of the so-called primitive peoples are thought to have been harsh-their existence was dominated by the incessant quest for food. In fact, primitives did very little work. By contemporary standards, we'd have to judge them as very lazy.
3. The key to understanding why these 'stone-age people' failed to act like us-increasing their work effort to get more things-is that they had limited desires. In the race between wanting and having, they had kept their wanting low and, in this way, ensured their own kind of satisfaction. They were materially poor by contemporary standards, but in at least one dimension-time- we have to count them richer.

Based on the understanding of the passage, answer the questions given below: (1x5=5)

- a) What is the basis for progress and growth according to the writer?
- b) What does the writer attribute to modern economics?
 - i. Our lives are better than our ancestors.
 - ii. The material progress leads to higher satisfaction and well-being
 - iii. The lives of earlier generations were easier and simple.

iv. The primitive people were lazy.

c) The primitive people lived a life of_____.

d) What is the key to understanding the primitive peoples' behaviour according to the passage?

e) How does the writer appreciate the primitives?

Q2. You need a software engineer for your organisation. Look for an advertisement published in the newspaper under the classified column, cut and paste. (2)

Q3. Sun View Public School, Delhi is organizing a one-act play competition in the month of June, in the school auditorium. You have decided to invite noted stage artiste, Saran Marar, B- 20, Hauz Khaz, New Delhi, to grace the occasion and be the chief Guest. Write a formal invitation(letter) to her in 50 words. You are Kavita/Kanav, the Cultural Secretary of your School. (3)

Q4. Write a letter to the Editor of National Herald, New Delhi about water scarcity in your locality suggesting ways to improve the position of water supply. You are Ramnath/ Reema of Ghaziabad. Word limit: 150-200. (5)

Answer the following questions in 30-40 words each. (2x3=6)

Q5. Discuss the significance of the tigers as symbols in "The Tiger King".

Q6. What does the phrase 'familiar ache' mean? (My Mother at Sixty Six)

Q7. How does M. Hamel pay tribute to the French language?

Answer the following question in 120- 150 words: (4x1=4)

Q8. How does "The Tiger King" explore the tension between tradition and progress?

Subject: Physics

Objectives:

- Revision of concepts
- Application of the concepts to real life situations.
- Skills to carry out research work and develop scientific aptitude.

Instructions:

- Neatly write all the answers in your assignment notebook.
- Attempt the questions keeping in mind the weightage of each question

Q1. A charge Q is divided into two parts of q and $(Q-q)$. If the Columbian repulsion between them when they are separated by a distance ' r ' is to be maximum then the ratio of Q/q should be

1

- (a) 2:1 (b) 1:2 (c) 4:1 (d) 1:4

Q2. Angle between equipotential surface and electric field lines is

1

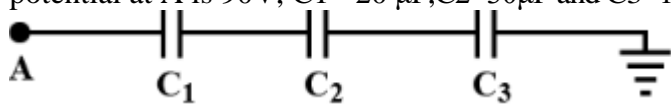
- (a) Zero (b) 180° (c) 90° (d) 45°

Q3. 64 identical drops of mercury are charged simultaneously to the same potential of 10 volt. Assuming the drops to be spherical, if all the charged drops are made to combine to form one large drop, then its potential will be

2

(d) The fact that there is no accumulation of charged at a junction.

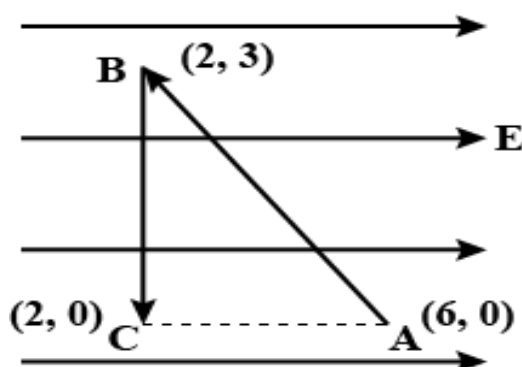
Q4. Calculate the potential difference and the energy stored in the capacitor C_2 in the circuit. Given potential at A is 90V, $C_1 = 20 \mu\text{F}$, $C_2 = 30 \mu\text{F}$ and $C_3 = 15 \mu\text{F}$



2

Q5. A test charge q is moved without acceleration from A to C along the path from A to B and then from B to C in electric field E as shown in figure below, (i) Calculate the potential difference between A and C. (ii) At which point (of the two) is the electric potential more and why?

2



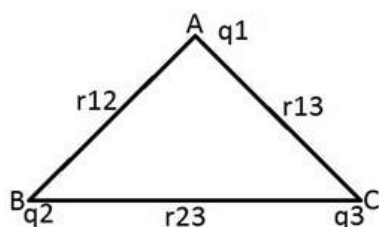
Q6. List two properties of equipotential surface. Depict the equipotential surfaces due to
(i) an electric dipole (ii) two identical negative charges separated by a small distance.

(1+2=3)

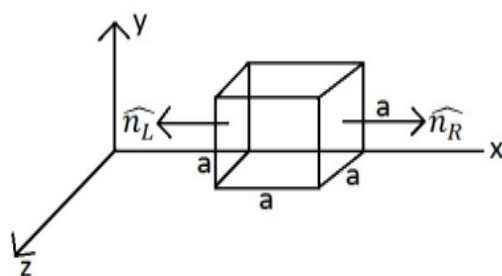
Q7. Define electrostatic potential at a point. Write its SI unit.

Three charges q_1 , q_2 and q_3 are kept respectively at point A, B, and C as shown in figure. Write the expression for electrostatic potential energy of the system.

3



Q8. The electric field components in the following figure are $E_x = \alpha x$, $E_y = 0$, $E_z = 0$: in which $\alpha = 400 \text{ N/Cm}$. Calculate (i) the electric flux through the cube (ii) the charge within the cube assume that $a = 0.1 \text{ m}$. 3



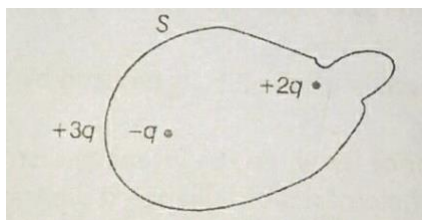
Q9. A parallel plate capacitor is charged by a battery. After some time the battery is disconnected and a dielectric slab with its thickness equal to the plate separation is inserted between the plates. How will (i) the capacitance of the capacitor, (ii) potential difference between the plates and (iii) the energy stored in the capacitor be affected? Justify your answer in each case. 3

Q10. (i) A point charge Q is placed at point O as shown in the figure. The potential difference $V_A - V_B$ is positive. Is the charge Q negative or positive? Justify. 1.5



(ii) If the electric field is given by $6\hat{i} + 3\hat{j} + 4\hat{k}$, Calculate the electric flux through a surface of area 20 units lying in $y - z$ plane. 1.5

(iii) Find the electric flux, due to the given configuration, through the surface S . 2



Subject: Chemistry

General Instructions:-

1. A copy of this assignment should be pasted in the classwork register.
2. Select a topic for the CBSE project and write a synopsis on it including the following points: aim, materials required, apparatus & procedure. (in a separate folder)

Assignment 1

1. State one use each of DDT and iodoform. 1
2. Which compound in the following couples will react faster in S_N2 displacement and why?
(i) 1-Bromopentane or 2-bromopentane
(ii) 1-bromo-2-methylbutane or 2-bromo-2-methylbutane 2
3. Although chlorine is an electron withdrawing group, yet it is ortho-, para-directing in electrophilic aromatic substitution reactions. Explain why it is so ? 2
4. Account for the following:
(i) The dipole moment of chlorobenzene is shorter than that in $CH_3 - Cl$.
(ii) Chloroform is stored in closed dark brown bottles. 2
5. Write the IUPAC name of $(CH_3)_2CH=CH(Cl)CH_3$ and $CH-CHCl-CH_2-CH=CH_2$ 2
6. (i) Chlorobenzene is extremely less reactive towards a nucleophilic substitution reaction. Give two reasons for the same.
(ii) Convert 2-Bromopropane into 1-Bromopropane 3
7. What happens when ethyl chloride is treated with
(i) aqueous KOH (ii) Alcoholic KOH. (iii) CH_3-ONa (iv) KCN
(v) AgCN (vi) KNO_2 (vii) $AgNO_2$ (viii) $CH\equiv CNa^+$ 4
8. Write a chemical reaction in which the
(i) Iodide ion replaces the diazonium group in a diazonium salt.
(ii) Chloride ion replaces the diazonium group in a diazonium salt.
(iii) Fluoride ion replaces the diazonium group in a diazonium salt.
(iv) Bromide ion replaces the diazonium group in a diazonium salt. 4
9. Give reasons for the following :
(i) Ethyl iodide undergoes S_N2 reaction faster than ethyl bromide.
(ii) (\pm) 2-Butanol is optically inactive.
(iii) C - X bond length in halobenzene is smaller than C - X bond length in $CH_3 - X$.
(iv) n-Butyl bromide has higher boiling point than t-butyl bromide.
(v) The presence of nitro group ($-NO_2$) at o/p positions increases the reactivity of haloarenes towards nucleophilic substitution reactions. 5
10. Answer the following:

- (i) Haloalkanes easily dissolve in organic solvents, why ?
- (ii) What is known as a racemic mixture ? Give an example.
- (iii) Of the two bromoderivatives, $\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)\text{Br}$ and $\text{C}_6\text{H}_5\text{CH}(\text{C}_6\text{H}_5)\text{Br}$, which one is more reactive in $\text{S}_{\text{N}}1$ substitution reaction and why ?
- (iv) A solution of KOH hydrolyses $\text{CH}_3\text{CHClCH}_2\text{CH}_3$ and $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$. Which one of these is more easily hydrolysed ?
- (v) Why dextro and laevo – rotatory isomers of Butan-2-ol are difficult to separate by fractional distillation ?

5

Subject: Computer Science

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

Q1 Why is Python interpreted? 1

Q2 Can sequence operations such as slicing and concatenation be applied to dictionaries? Why? 1

Q3 Write the most appropriate list method to perform the following tasks and justify with the help of an example. 5

- (a) Delete a given element from the list.
- (b) Delete 3rd element from the list.
- (c) Add an element in the end of the list.
- (d) Add an element in the beginning of the list.
- (e) Add elements of a list in the end of a list.

Q4 Find errors, underline them and rewrite the same after correcting the following code:- 2

```
d1 = dict[]
i = 1
n = input ("Enter number of entries : ")
while i <= n :
    a = input ("Enter name:")
    b = input ("Enter age:")
    d1 (a) = b
    i = i + 1
l = d1.key []
for i in l :
    print (i, '\t', 'd1[ i ]')
```

Q5 The following code is not giving desired output. We want to input value as 20 and obtain output as 40. Could you pinpoint the problem? 2

```
Number = input ( "Enter Number")
DoubleTheNumber = Number * 2
Print (DoubleTheNumber)
```

Q6 Figure out the problem with following code fragment. Correct the code and then print the output. 2

1. s1 = 'must'
2. s2 = 'try'
3. n1 = 10
4. n2 = 3
5. print (s1 + s2)
6. print (s2 * n2)
7. print (s1 + n1)
8. print (s2 * s1)

Q7 If the addition of a new key:value pair causes the size of the dictionary to grow beyond its original size, an error occurs. True or false? 2

Q8 MCQ

(1x10=10)

1. Which of the following is an invalid variable?

- (a) my_day_2
- (b) 2nd_day
- (c) Day_two
- (d) _2

2. Which of the following is not a keyword?

- (a) eval
- (b) assert
- (c) nonlocal
- (d) pass

3. Which of the following cannot be a variable?

- (a) __init__
- (b) in
- (c) it
- (d) on

4. Which of these is not a core data type?

- (a) Lists
- (b) Dictionary
- (c) Tuples
- (d) Class

5. How would you write xy in Python as an expression?

- (a) x^y
- (b) $x**y$
- (c) $x^{^y}$
- (d) none of these

6. What will be the value of the expression?

$14 + 13 \% 15$

- (a) 14
- (b) 27
- (c) 12
- (d) 0

7. Evaluate the expression given below if $A = 16$ and $B = 15$.

$A \% B // A$

- (a) 0.0
- (b) 0
- (c) 1.0
- (d) 1

8. What is the value of x ?

$x = \text{int}(13.25 \times 4/2)$

- (a) 17

(b) 14

(c) 15

(d) 23

9. The expression $8/4/2$ will evaluate equivalent to which of the following expressions:

(a) $8/(4/2)$

(b) $(8/4)/2$

(c) $8//4//2$

(d) $((8//4)/4)/2$

10. Which among the following list of operators has the highest precedence?

$+, -, **, \%, /, <<, >>, |$

(a) $<<, >>$

(b) $**$

(c) $|$

(d) $\%$

Q9 Fill in the Blanks:

$\frac{1}{2} \times 5 = 2.5$

a) In Python, the non-zero value is treated as _____ and zero value is treated as _____.

b) Keys of a dictionary must be _____.

c) In _____, the adjoining values in a sequence are compared and exchanged repeatedly until the entire array is sorted.

d) Logical operators are used to combine two or more _____ expressions.

e) The _____ function returns the length of a specified list.

Q10 State True or False

$\frac{1}{2} \times 5 = 2.5$

a) For any index n , $s[:n] + s[n:]$ will give you original string s .

b) A dictionary can contain keys of any valid Python types.

c) The two statements $x = \text{int}(22.0/7)$ and $x = \text{int}(22/7.0)$ yield the same results.

d) The given statement: $x + 1 = x$ is a valid statement.

e) List slice is a list in itself.

Subject: Informatics Practices

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

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```
for i in l :
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(c) $|$

(d) $\%$

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e) List slice is a list in itself.

Subject: Economics

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

- Q1. What are externalities? Give an example of a positive externality and its impact on welfare of the people. (2)
- Q2. Explain the expenditure method of estimating National Income. (2)
- Q3. Explain how 'distribution of Gross Domestic Product' is a limitation in taking Gross Domestic Product as an index of welfare. (2)
- Q4. Give the meaning of factor income to abroad and factor income from abroad. Also give an example of each. (2)
- Q5. Explain how 'non-monetary exchanges' are a limitation in taking domestic product as an index of welfare? (2)
- Q6. Distinguish between domestic product and national product. When can domestic product be more than the national product? (3)
- Q7. Explain why subsidies are added to and indirect taxes deducted from domestic product at market price to arrive at domestic product at factor cost? (3)
- Q8. How will you treat the following while estimating domestic product of India? Give reasons. (3)
- i. Rent received by a resident Indian from his property in Singapore.
 - ii. Profits earned by a branch of an American Bank in India.
 - iii. Salaries paid to Koreans working in Indian embassy in Korea
- Q9. Is net export a part of NFIA? Explain. (3)
- Q10 Distinguish between Real Gross Domestic Product and Nominal Gross Domestic Product. Which of these is a better index of welfare of the people and why? (3)

Subject: Biology

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

- Q1. What will be the ploidy of the cells of the nucellus, MMC, the functional megaspore and female gametophyte? (2)
- Q2. Both wind and water-pollinated flowers are not very colorful and do not produce nectar. What would be the reason for this? (2)
- Q3. Arrange the following terms in the correct developmental sequence:
Pollen grain, sporogenous tissue, microspore tetrad, pollen mother cell, male gametes. (2)
- Q4. What is meant by emasculation? When and why does a plant breeder employ this technique? (2)
- Q5. What is self-incompatibility? Why does self-pollination not lead to seed formation in self-incompatible species? (3)
- Q6. What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion. (3)
- Q7. Explain the role of tapetum in the formation of pollengrain wall. (3)
- Q8. Why do you think the zygote is dormant for sometime in a fertilized ovule? (3)
- Q9. (a) A mature embryo sac in a flowering plant may possess 7-cells, but 8-nuclei. Explain with the help of a diagram only.
(b) Mention the ploidy of the different types of cells present in the female gametophyte of an angiosperm. (3+2 = 5)
- Q10. (a) Name all the haploid cells present in an unfertilized mature embryo sac of a flowering plant. Write the total number of cells in it.
(b) Geitonogamous flowering plants are genetically autogamous, but functionally cross-pollinated. Justify.
(c) State one advantage and one disadvantage of cleistogamy. (2+2+1 = 5)

Subject: Mathematics

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

(INVERSE TRIGONOMETRIC FUNCTIONS)

Each question carries 4 marks.

Q1	Find the principal value of $\sin^{-1}\left(\frac{1}{2}\right)$ and $\sin^{-1}\left(\frac{-1}{\sqrt{2}}\right)$.
Q2	Find the principal values of $\cos^{-1} \frac{\sqrt{3}}{2}$ and $\cos^{-1} \left(-\frac{1}{2}\right)$.
Q3	Find the principal values of $\cot^{-1} \sqrt{3}$ and $\cot^{-1} (-1)$.
Q4	Evaluate each of the following : (i) $\sin^{-1}\left(\sin \frac{\pi}{3}\right)$ (ii) $\cos^{-1}\left(\cos \frac{2\pi}{3}\right)$ (iii) $\tan^{-1}\left(\tan \frac{\pi}{4}\right)$ (iv) $\sin^{-1}\left(\sin \frac{2\pi}{3}\right)$ (v) $\cos^{-1}\left(\cos \frac{7\pi}{6}\right)$ (vi) $\tan^{-1}\left(\tan \frac{3\pi}{4}\right)$
Q5	Prove that : $\sin^{-1} \frac{12}{13} + \cos^{-1} \frac{4}{5} + \tan^{-1} \frac{63}{16} = \pi$
Q6	Prove that $\sin^{-1} \frac{3}{5} - \sin^{-1} \frac{8}{17} = \cos^{-1} \frac{84}{85}$
Q7	Evaluate the following : (i) $\sin^{-1}(\sin 10)$ (ii) $\sin^{-1}(\sin 5)$ (iii) $\cos^{-1}(\cos 10)$ (iv) $\tan^{-1}\{\tan(-6)\}$
Q8	Simplify each of the following : (i) $\sin^{-1}\left(\frac{\sin x + \cos x}{\sqrt{2}}\right), -\frac{\pi}{4} < x < \frac{\pi}{4}$ (ii) $\cos^{-1}\left(\frac{\sin x + \cos x}{\sqrt{2}}\right), \frac{\pi}{4} < x < \frac{5\pi}{4}$

Q9	Prove that : $\sec^2(\tan^{-1} 2) + \operatorname{cosec}^2(\cot^{-1} 3) = 15$
Q10	Prove that : (i) $\sin[\cot^{-1}\{\cos(\tan^{-1} x)\}] = \sqrt{\frac{x^2 + 1}{x^2 + 2}}$ (ii) $\cos[\tan^{-1}\{\sin(\cot^{-1} x)\}] = \sqrt{\frac{x^2 + 1}{x^2 + 2}}$

Subject: Physical Education

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

- Q. 1. Planning means.... 1
- (a) To participate in games (b) To win
(c) To decide in advance (d) None of these
- Q. 2. Staffing means..... 1
- (a) To appoint the employees (b) To select the employees
(c) Coaching of employees (d) All of these
- Q. 3. is the administrative operation of specifying grouping tasks. 1
- (a) Planning (b) Staffing
(c) Organising (d) Directing
4. What do you mean by knock-out tournament? Draw the fixtures of 23 teams on knockout basis. 5
5. What do you mean by knock-out tournament? Discuss the advantages and disadvantages of knock-out tournament. 5
6. What do you mean by intramurals? Mention the significance of intramurals for school children. 5
7. What do you mean by extramural? Elucidate the significance of extramural. 5
8. What exercises children under 5 years of age must do? 5
9. What exercises adults under 18–64 years of age must do? 5
10. What exercises people living with chronic conditions must do? 5

Subject: Psychology

General Instructions:

- Neatly write all the answers in your notebook.
- Attempt the questions keeping in mind the weightage of each question.

- Q1. A person having a _____ sets a standard for guiding her/his actions in life and for judging others. 1
- Q2. _____ refers to an individual's underlying potential for acquiring skills. 1
- Q3. Aditya has to interview, a famous politician on a live T.V. show. Which is the most appropriate type of interview he can use? 2
- Q4. Why is emotional intelligence receiving increasing attention of educators? 2
- Q5. Describe key feature of the case study method. 2
- Q6. Angad has been the topper in a class. He went to the topmost college, where he was neither sensitive to his own self or to others. This led to problems in interpersonal relationships with reference to his condition. Explain the importance of the emotional intelligence in his life. 2
- Q7. Think of an international conflict. Suggest conflict resolution strategies for the same. 3
- Q8. Explain the competencies of Indian notion of intelligence. 4
- Q9. How is aptitude different from intelligence? Explain how the PASS model helps us in understand intelligence. 4
- Q10. Explain the relationship between creativity and intelligence. 4