SANT NIRANKARI PUBLIC SCHOOL

ASSIGNMENT - 1 (MATHEMATICS)

WEEK 3 (CLASS XII)

1. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x^2}+\sqrt{1-x^2}}{\sqrt{1+x^2}-\sqrt{1-x^2}}\right) = \frac{\pi}{4}+\frac{1}{2}\cos^{-1}x^2$
2. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x^3}+\sqrt{1-x^3}}{\sqrt{1+x^3}-\sqrt{1-x^3}}\right) = \frac{\pi}{4}+\frac{1}{2}\cos^{-1}x^3$
3. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x^4}+\sqrt{1-x^4}}{\sqrt{1+x^4}-\sqrt{1-x^4}}\right) = \frac{\pi}{4}+\frac{1}{2}\cos^{-1}x^4$
4. Prove that $\tan^{-1}\left(\frac{\sqrt{1+x^n}+\sqrt{1-x^n}}{\sqrt{1+x^n}-\sqrt{1-x^n}}\right) = \frac{\pi}{4}+\frac{1}{2}\cos^{-1}x^n$
5. Find the simplest Form $\cos^{-1}(\frac{3}{5}cosx+\frac{4}{5}sinx)$
6. Prove that $\sin^{-1}\frac{8}{17}+\sin^{-1}\frac{3}{5}=\sin^{-1}\frac{77}{85}$
7. Prove that $\sin^{-1}\frac{5}{13}+\cos^{-1}\frac{3}{5}=\tan^{-1}\frac{63}{16}$

SANT NIRANKARI PUBLIC SCHOOL

ASSIGNMENT - 2 (MATHEMATICS)

WEEK 3 (CLASS XII)

1. *Prove that* $\tan^{-1}\frac{1}{4}+\tan^{-1}\frac{2}{9}=\sin^{-1}\frac{1}{\sqrt{5}}$
2. *Find the value of* $4\tan^{-1}\frac{1}{4}+\tan^{-1}\frac{1}{239}$
3. *Find the value of* $2\tan^{-1}(-3) = -\frac{\pi}{2}+\tan^{-1}\frac{1}{239}$
4. *Find the value of* $\tan^{-1}(tan\frac{2\pi}{3})$
5. *Find the value of* $\tan^{-1}(-\frac{1}{\sqrt{3}})+\cot^{-1}\frac{1}{\sqrt{3}}+\tan^{-1}(sin\frac{-\pi}{2})$

JUNE (Week-3)

Subject : Physics

Assignment 1

CHAPTER-2

Electric Potential and Capacitance

Q.1 A thin infinitely long conducting wire having linear charge density λ is enclosed by a cylindrical surface of radius r and length l, its axis coinciding with the length of the wire. Find the expression for the electric flux passing through the surface of the cylinder.

Q.2 Two charges of magnitudes – 2Q and +Q are located at points (a,0) and (4a,0) respectively. What is the electric flux due these charges through a sphere of radius 3a with its centre at origin?

Q.3 Careful measurement of electric field at the surface r. a sphere of equal radius r is constructed with its centre at the surface of a black box indicates that the net outward flux through the surface of box is

(a) What is the net charge inside the box?

(b) If the net outward flux through the surface of box were zero. Could you conclude that there was no charge inside the box why or why not?

Q.4 A uniformly charged conducting sphere of diameter 2.5 m has a surface charge density 100 μC/m^2calculate (a) charge on the sphere (b) total electric flux through the sphere [Ans: (a) ( )]

Q.5 are two hollow concentric spheres enclosing charges Q and 2Q respectively.

(a) What is the ratio of electric flux through

(b) How will the electric flux through the sphere change if a medium of dielectric constant 5 is introduced in the space inside in place of air.

Q.6 Two large thin metallic plates are placed close to each other. The plates have surface charge densities of opposite signs and of magnitude
calculate the electric field intensity (a) in the outer region of the plates (b) in the interior region between the plates.

Q.7 Two uniformly large parallel thin plates having charge densities + and - are kept in the X-Z plane at a distance d apart sketch an equipotential surface due to electric field between the plates. If a particle of mass m and charge –q remains stationary between the plates what is the magnitude and direction of this field?

Q.8 The electric field components in the figure are calculate (i) the flux through the cube (ii) the charge within the cube take a=0.1 m.

Q.9 An early model for an atom considered to have a positively charged point nucleus of charge +ze, surrounded by a uniform density of negative charge upto a radius R. the atom as a whole is neutral. For this model, what is the electric field at a distance r from nucleus when (a) r>R (b) r<R.

Q.10 An electric dipole is held in a uniform electric field E.

(a) Show that the net force acting on it is zero.

(b) The dipole is aligned parallel to the electric field. Find the work done in rotating it through the angle of 180°.

JUNE (Week-3)

Subject : Physics

Assignment 2

CHAPTER-2

Electric Potential and Capacitance

Q.1 An electric dipole of length 2cm, when placed with its axis making an angle of 60° with a uniform electric field, experiences a torque of $8\ 3$Nm. Calculate the potential energy of the dipole, if it has charges of ±4 nC.

Q.2 What orientation of an electric dipole corresponds to (i) Stable and (ii) Unstable equilibrium?

Q.3 Calculate the amount of work done in turning an electric dipole of dipole moment cm from its position of unstable equilibrium to stable equilibrium in a uniform electric field intensity 103 N/C.

Q.4 A dipole is present in an electrostatic field of magnitude 106 N/C. if the work done in rotating it, from its position of stable equilibrium to its position of unstable equilibrium is find the magnitude of the dipole moment of this dipole.

Q.5 A spherical conducting shell of inner radius R_1 and outer radius R_2 has a charge Q. A charge q is placed at the centre of the shell.

Q.6 (a) Given a uniform electric field N/C find the flux of this field through a square of side 10 cm whose plane is parallel to Y-Z plane.

(b) What would be the flux through the same square if the plane makes an angle of 30^o with the X-axis?

Q.7 An early model for an atom considered to have a positively charged point nucleus of charge +ze, surrounded by a uniform density of negative charge upto a radius R. the atom as a whole is neutral. For this model, what is the electric field at a distance r from nucleus when (a) r>R (b) r<R.

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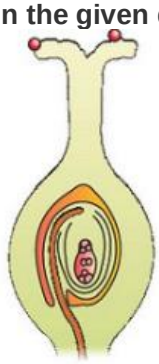
SANT NIRANKARI PUBLIC SCHOOL

WORKSHEET [june]

CLASS XII BIOLOGY [Sexual reproduction in flowering plants]

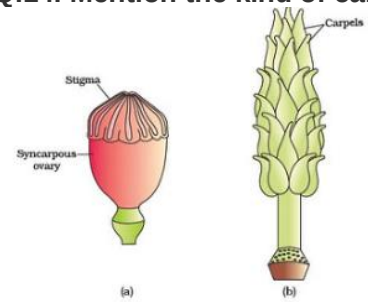
Q.1. What are the component cells of the egg apparatus in an embryo sac?
Q.2. Which part of gynoecium determines the compatible nature of pollen grain?
Q.3. What is common in the function performed by nucellus and cotyledon?
Q.4. Fill in the missing words:
Pollen mother cell → Pollen tetrad → Pollen grain → Vegetative cell, ___?____
Q.5. In the following events, indicate the stages where mitosis and meiosis occur (1,2,3).
Megaspore mother cell →(1)→Megaspores→(2)→Embryo sacs→(3)→Egg

Q.6. Show the direction of the pollen tube from the pollen on the stigma in the embryo sac in the given diagram.



Q.7. Which regions of pistil form fruits and seeds?
Q.8. During polyembryony, if one embryo is formed from synergids and the other from nucellus, state the one that is haploid and the one that is diploid.
Q.9. Is it possible that an unfertilized apomictic embryo sac gives rise to a diploid embryo? Give a reason in support of your answer.
Q.10. When a pollen grain is shed at the 3-celled stage, which three cells are found?

Q.11. Define self-incompatibility. How do self-incompatible plants pollinate?
Q.12. Which is a triploid tissue? How is the condition achieved in a fertilized ovule?
Q.13. Does apomixis require fertilization and pollination? Give reasons in support of your answer.
Q.14. Mention the kind of carpel in the diagram given below.



Q.15. How do aquatic plants undergo pollination?

SANT NIRANKARI PUBLIC SCHOOL

WORKSHEET [june]

CLASS XII BIOLOGY [Sexual reproduction in flowering plants]

Q1. . Each pollen grain in the flowering plants produces male gametes. State the function of the male gametes.
Q.2. List out the agents of pollination.

Q.3. What is pollination?

Q.4.What are the stages of post-fertilization in plants?

Q.5.What are the male and female reproductive parts of a flower?

Q.6.What is cross-pollination?

Q.7.Define double fertilization.

Q.8.What are the main layers of a flower?

Q.9 Define Morphogenesis.

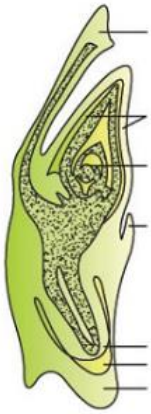
Q.10 State the role of endothecium.

Q.11. How does a chasmogamous bisexual flower prevent self-pollination?
Q.12. Arrange them sequentially according to how they appear in the artificial hybridization programme.

1. **Rebagging**
2. **Selection of parents**
3. **Bagging**
4. **Dusting the pollen on the stigma**
5. **Emasculation**
6. **Collection of pollen**

Q.13. How do self-incompatibility restrict autogamy? How does pollination occur in such plants?.

Q.14. Label the following diagram.



Q15.5. Explain the term polyembryony. How is it exploited commercially?.

Sant Nirankari Public School
Nirankari Colony
Class XII
Assignment- 1 (Week 3)
Subject: Computer
Topic: Functions

1a) What is default parameter?
b) Can a function return multiple values in python?

2 a) Give example of positional parameter.
b) Carefully observe the code and give the output:

```
def example(a):
    a = a + '2'
    a = a*2
    return a
example("hello")
```

3 a) What is the output of the following program:

```
def myfunc(a):
    a = a + 2
    a = a * 2
    return a
print(myfunc(2))
```

b) Find and write the output of the following python code:

```
x = "abcdef"
i = "a"
while i in x:
    print(i, end = " ")
```

the output is aaaaaa OR infinite loop. Give reason, why and how ?

4 a) Find and write the output of the following python code:

```
a=10
def call():
    global a
    a=15
    b=20
    print(a)
call()
```

b**)** From the program code given below, identify the parts mentioned below:

```
def num(x):
    x=50
    return x+3
y=55
res=num(y)
```

Identify these parts: function header, function call, arguments, parameters, function body, main program .

Sant Nirankari Public School
Nirankari Colony
Class XII
Assignment- 2 (Week 3)
Subject: Computer
Topic: Functions

Q-1 What is the output of the below program ?

```
x = 50
def func(x):
  print('x is', x)
  x = 2
   print('Changed local x to', x)
func(x)
print('x is now', x)
```

a) x is now 50 b) x is now 2 c) x is now 100 d) None of the mentioned

Q-2 What is the output of the below program?

```
x = 50
def func():
   global x
   print('x is', x)
   x = 2
   print('Changed global x to', x)
func()
print('Value of x is', x)
```

a) x is 50
Changed global x to 2
Value of x is 50

b) x is 50
Changed global x to 2
Value of x is 2

c) x is 50
Changed global x to 50
Value of x is 50

d) None of the mentioned
Q 3 Which keyword is use for function?

a) fun b) define c) def d) function

Q-4 Which of the following is the use of function in python?

a) Functions are reusable pieces of programs

b) Functions don’t provide better modularity for your application

c) you can’t also create your own functions

d) All of the mentioned

Q-5 What is the output of the below program?

```
def sayHello():
   print('Hello World!')
sayHello()
sayHello()
```

a) Hello World!

Hello World!

b) ‘Hello World!’

‘Hello World!’

c) Hello

Hello

d) None of the mentioned

ENGLISH ASSIGNMENT- JUNE (2021-22) - CLASS XII

THIRD WEEK – ASSIGNMENT 1

Poem 2- An Elementary School Classroom in a Slum

Reference to Context:-

1. ***Far far from gusty waves these children’s faces.***
   Like rootless weeds, the hair torn round their pallor.
   The tall girl with her weighed-down head. The paper-
   Seeming boy. With rats eyes.

a. Who is the poet talking about?
b. What does picture of children depict ?

c. Explain weighed down head.
d. Explain far far from gusty waves.
e. Explain like rootless weeds.
f. Explain rat's eyes.

2. ***The stunted , unlucky heir of twisted bones, reciting a father's gnarled disease,***
His lesson from his desk. At back of the dim class
One unnoted, sweet and young. His eyes live in a dream,
Of squirrel's game, in tree room , other than this.

a. What has the unlucky heir inherited?
b. Who sits at the back of dim classroom?

3. ***On sour cream walls , donations. Shakespeare's head.***
Cloudless at dawn, civilized dome riding all cities.
Belled , flowery, Tyrolese valley. Open handed map
Awarding the world its world.

a. What does the color of a classroom suggested?
b. What does 'Shakespeare's head' suggest ?
c. Explain 'civilised dome riding all cities'.
d. Explain awarding the world its world.

4. ***And yet, for these children , these windows, not this map, their world,***
Where all their future painted with a fog, A narrow street sealed in with a lead sky
Far far from rivers, capes, and stars of words.

a. What does 'these windows' and ' these maps' represensts ?
b. What is the future of these children ?
c. What does 'lead sky' and narrow street symbolize?
d. Explain the phrase 'stars of words'.

5. ***Surely, Shakespeare is wicked, the map a bad example,***
With ships and sun and love tempting them to steal
For lives that slyly turn in their cramped holes
From fog to endless night?

a. Why is Shakespeare wicked and a map a bad example?
b. How do the poet describe the present condition of these children in these lines?
c. Explain from fog to endless night.
d. What are the things that the slum children are tempted to steal ?

6. ***On their slag heap , these children wear skins peeped through by bones and spectacles of steel***
   With mended glass, like bottle bits on stones. All of their time and space are foggy slum.
   So blot their maps with slums as big as doom.

   a. What does slag heap refers to ?
   b. Explain skins peeped through by bones.
   c. What is the comparison drawn with bottle bits on stones ?
   d. Explain so blot their maps with slums as big as doom.

7. ***Unless governor, inspector , visitor,***
   This map becomes their window and these windows
   That shut upon their lives like catacombs,
   Break O break open till they break the town.

   a. What is expected of the governor, inspector and visitor and Why ?
   b. How can this map will become their window ?
   c. Explain the reference to catacombs.
   d. Break O Break open—What should they break ?

8. ***And show the children to green fields and make their world***
   Run azure on gold sands, and let their tongues
   Run naked into books the white and green leaves open
   History theirs whose language is the sun.

   a. What kind of a world does the poet visualize for these children ?
   b. What does the green fields and gold sands symbolize ?
   c. Explain – let their tongues run naked into books.
   d. Explain – History theirs whose language is the sun.

Assignment 2

RAGPICKERS OF SEEMAPURI

1. What does Saheb do for a living?
2. What promise did the writer hold out to Saheb? What explanation did she later give for not fulfilling it?
3. What was Saheb's full name? Was it suitable for him and what is ironic about it?
4. Why did the rag picking children not wear shoes?
5. What did garbage mean to the children of Seemapuri and to their parents?
6. "The steel canister seems heavier than the plastic bag." Explain.

LONG QUESTION :-

1."Seemapuri is on the periphery of Delhi, yet miles away from it metaphorically". Explain what the author means by this?

BANGLE MAKERS OF FIROZABAD

1. What makes the city of Firozabad famous?
2. Mention the hazards of working in the glass bangles industry?
3. Who is Mukesh? What is his dream?
4. "It is his karam, his destiny." What is Mukesh's family's attitude towards their situation?
5. Why could the bangle makers not organize themselves into co-operatives?

LONG QUESTION

1. **'**Lost Spring' explains the grinding poverty and traditions that condemns thousands of people to a life of abject poverty. Do you agree? Why/Why not?

SANT NIRANKARI PUBLIC SCHOOL

SUBJECT – CHEMISTRY

CLASS – XII ASSIGNMENT – 1

1. Can you store AgCl solution in Zinc pot?
2. Can an electrochemical cell act as electrolytic cell? How?
3. What are the factors on which conductivity of an electrolyte depend?
4. How is molar conductance related to conductivity of an electrolyte ?
5. The conductivity of metals decreases while that of electrolytes increases with increases in temperature. Why?

SANT NIRANKARI PUBLIC SCHOOL

SUBJECT – CHEMISTRY

CLASS – XII ASSIGNMENT – 2

1. What does the positive value of standard electrode potential indicate?
2. Give some uses of electrochemical cells?
3. How is Limiting molar conductivity related to
   (i) degree of ionization and (ii) dissociation constant.
4. State Faraday's Laws of electrolysis?
5. How many electrons flow when a current of 5 amps is passed through a solution for 193 sec. Given f = 96500 C. ?

SANT NIRANKARI PUBLIC SCHOOL -9

SESSION [2021-22] JUNE

PHYSICAL EDUCATION {SPORTS AND NUTRITION)

Class -12TH

JUNE WEEK-3 (ASSINGMENT 1)

1.Explain fat soluble vitamin.

2.Define Nutrition.

3.what is balance diet.

4 what is Protein?

5.How many type of carbohydrates are there?

JUNE WEEK-3 (ASSINGMENT 2)

1.Enlist minerals present in food.

2.Explain nutritive components of diet.

3.Explain fibre or roughage in brief.

4.Name any five food Myth.

5.Explain the importance of wat

SANT NIRANKARI SCHOOL NIRANKARI COLONY

CHAPTER 3- NATIONAL INCOME AND ITS AGGREGATES

WORKSHEET – 3

Q.1. Define the following :

(a) GDPMP (ii) National Income (iii) Domestic Income

Q.2. if the GDP deflator is 150% and real GDP is Rs. 1,100 the nominal GDP will be :

(a) Rs. 733 (b) Rs. 1,650 (c) Rs. 1,300 (d) Rs. 2,750 Q.4. When can Real GDP be greater than Nominal GDP?

Q.5. if the real GDP of a country is rising, the welfare of people always rise. (true/false)

Q.6. Calculate real national income, nominal national income and price index. Also interpret the results.

GOODS	PRICE AT CURRENT PRICE (P1)	PRICE AT BASE YEAR (P2)	QUANTITY OF CURRENT YEAR (Q1)	QUANTITY OF BASE YEAR (Q2)
A	20	10	10	5
B	30	30	30	10
C	50	40	5	2

Q.7. Calculate real GNP ; nominal GNP and GNP Deflator.

GOODS	PRICE AT CURRENT PRICE (P1)	PRICE AT BASE YEAR (P2)	QUANTITY OF CURRENT YEAR (Q1)
A	20	10	100
B	10	5	200
C	30	20	50

Q.8. if the Nominal Gross Domestic Product = Rs. 4400 crore and the Price Index (base = 100) = 110, Calculate the real GDP.

Q.9. Give one example of 'externality' which reduces welfare of the people.

Q.10. Give an example of negative externality.

Q.11. Suppose a ban is imposed on consumption of tobacco. Examine its likely effects on (a) gross Domestic product and (b) welfare.

Q.12. Government incurs expenditure to popularize yoga among the masses . Analyse its impact on gross domestic product and welfare of the people.

Q.18. Sale if petrol and diesel cars is rising particularly in big cities. Analyse its impact on gross domestic product and welfare.

Q.19. Explain 'non monetary exchanges ' as a limitation of using GDP as an index of welfare of a country

Q.20 . Write down some of the limitation of using GDP as an index of welfare of a country.

SANT NIRANKARI SCHOOL NIRANKARI COLONY

CHAPTER 4- CALCULATION OF NATIONAL INCOME

WORKSHEET – 4

Q.1. Calculate GVA at factor cost of a firm:

ITEMS AMOUNT (IN LAKHS)

i. Indirect taxes 400 ii. Price per unit of output 10 iii. Output sold in units 2,000 iv. Net change in stocks (-) 50

v. Purchases of raw materials 10,000
vi. Import of raw material 3,000
vii. Import of machines 20,000
viii. Subsidies 100 (Ans. 9,650)

Q.2. Find NVA_{FC} of a firm:

	ITEMS	AMOUNT (IN LAKHS)
i.	Durable use producer goods with a life span of 10 years	10
ii.	Single use producer goods	5
iii.	Sales	20
iv.	Unsold output produce during the year	2
v.	Net indirect taxes	1

(Ans. 15)

Q.3. Calculate 'Sales" from the following :

ITEMS AMOUNT (IN LAKHS)

i. Subsidies 200 ii. Opening stock 100 iii. Closing stock 600 iv. Intermediate consumption 3000 v. Consumption of fixed capital 700 vi. Profit 750 vii. Net value added at factor cost 2000 viii. Exports 100

(Ans. 5000)

Q.4. Calculate 'Value of Output'

ITEMS AMOUNT (IN CRORES)

i. Net value added at factor cost 100 ii. Intermediate costs 20 iii. Subsidy 5

iv. Depreciation 10

(Ans. 200 crores)

Q.5. Calculate Net Value added at factor costs and Gross Value Added at market price.

	ITEMS	AMOUNT
i.	Domestic sales	45,900
ii.	Opening stock of inventories	12,800
iii.	Closing stock of inventories	16,500
iv.	Exports	6,780
v.	Consumption of fixed capital	1,500
vi.	Indirect taxes	1,540
vii.	Direct taxes	650
viii.	Purchase of raw materials from domestic market	12,100
ix.	Import of raw materials	3,200

(Ans. GVA at mp --- 38040 and NVA at fc---- 41080)