Q1. a. Write the vector form of Coulomb ' s law in vector form.

  b. Derive the expression of electric field due to a dipole at axial and equatorial position.

  c. A rod of length L has a total, charge Q distributed uniformly along its length. It is bent in form of a shape of a semicircle. Find the magnitude of electric field at the centre of curvature of the semicircle.

Q2. a. Derive the Coulomb's law with help of Gauss law.

  b. Draw the graph for variation of electric field due to hollow sphere with distance from the centre of the sphere.

Q3. a. Use Gauss law to find electric field due to a metal sheet having surface charge density σ.

  b. Draw the graph of variation of electric field with distance for a metal sheet.

Q4. a. Find the expression of energy stored in a capacitor.

  b. A point charge Q is placed at the origin. Find the electrostatic energy stored outside the sphere of radius R centered at the origin.

Q5. a. Find the expression of energy density in a electric field.

  b. Figure shows a parallel plate capacitor having square plate of edge a and plate separation d. The gap between the plates is filled with a dielectric of dielectric constant K which parallel to edge as $K=K_0 +• x$, where K_0 and • are constant. X is the distance measured from the left end. Calculate the capacitance.
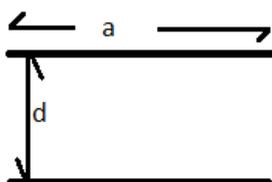
Q6. a. Prove that $i=neAV_d$, where i=current, n= no of free electrons per unit volume, A =cross sectional area , V_d = drift velocity.

  b. Derive the expression of balanced Wheat stone bridge condition using Kirchoff's law.

Q7. a. Two cells of e_1 and e_2 having internal resistance r_1 and r_2 are connected in parallel. Then find the expression for net emf and net internal resistance.

  b. Draw the circuit diagram for measuring the emf of an unknown cell using potentiometer.

Q8. a. If the position of the cell and the galvanometer is exchanged , will the condition of balanced Wheatstone bridge change or will remain same.

  b. Derive the expression of magnetic field due to a circular loop carrying current I at a distance of X from the centre of the loop having radius R.

Q9. a. Derive the expression of magnetic field due to a long straight wire at a

perpendicular distance of **a** from it carrying current I.

    b.   Find the expression of magnetic field at the centeroid of a equilateral triangle of side length a carrying current I

Q10. a.   Prove that in a capacitor current leads from voltage by a phase angle of 90^0.

    b.   Prove that in an inductor current lags from voltage by a phase angle of 90^0

BURNPUR RIVERSIDE SCHOOL , BURNPUR
ASSIGNMENT-2
SESSION: 2020-2021- TERM-2
CLASS : XII
SUBJECT:PHYSICS

Q1. a. Find the expression of band width in case of a series RLC circuit when connected to alternating current source.

   b. Obtain the expression of the energy density of an electromagnetic wave.

Q2. a. Write condition for minimum deviation in case of a prism.

   b. Find the relation between the refractive index , angle of prism and minimum deviation .

Q3. a. Draw the ray diagram for compound microscope for near point adjustment.

   b. Derive the expression of magnification of a compound microscope for near point adjustment.

Q4. a. Draw the ray diagram for astronomical telescope for near point adjustment.

   b. Derive the expression of magnification of an astronomical telescope for near point adjustment.

Q5. a. Derive the expression of lens maker formula.

   b. Derive the expression for magnification of simple microscope for near point adjustment.

Q6. a. Deduce the expression for fringe width in Young's double slit experiment.

   b. How can the wavelength of monochromatic light be found by this experiment.

Q7. a. Draw the graph for variation of stopping potential VS frequency for a photoelectric emission from a metal surface.

   b. Draw the graph for variation of photoelectric current VS anode potential for a photoelectric emission from a metal surface

Q8. a. Derive the expression of radius of orbit of nth in hydrogen like atom.

   b. Derive the expression of velocity of electron in the nth orbital of a hydrogen like atom.

Q9. a. Find the expression of nuclear density. Is it same for all elements.

   b. Write two properties of alpha particle.

Q10. a. Draw the circuit diagram for half wave rectifier.

   b. Draw the circuit diagram for full wave rectifier.

1. What is the basis of accounting followed while preparing the Income and Expenditure Account?
   (a) Cash Basis
   (b) Accrual Basis
   (c) Both (a) and (b)
   (d) None of these

2. Goodwill of the firm is valued at Rs. 2, 00,000. Goodwill also appears in the books at Rs. 80,000. Kanisk is admitted for 1/4th share. The amount of goodwill brought in by Kanisk will be:
   (a) Rs. 50,000
   (b) Rs. 20,000
   (c) Rs. 30,000
   (d) Rs. 70,000

3. X Ltd. acquired assets of Rs. 20 lakhs and took over creditors of Rs. 20 thousand from Y Ltd. X Ltd. issued 8% debentures of Rs. 200 each at a discount of 10% as purchase consideration. Number of debentures issued will be:
   (a) 11,000
   (b) 9,000
   (c) 10,000
   (d) 10,100

4. On April 1st, 2020, an existing firm had assets of Rs. 5, 00,000 including cash of Rs. 20,000. The firm had a general reserve of Rs. 90,000; partner's capital accounts showed a balance of Rs. 3, 80,000 and creditors amounted to Rs. 30,000. If the normal rate of return is 20% and the goodwill of the firm is valued at Rs. 64,000 at 4 year's purchase of super profit, find the average profits of the firm.

5. Arjun, Bhim and Nakul are partners sharing profits and losses in the ratio of 14: 5: 6 respectively. Bhim retires and surrenders his 5/25th share in favour of Arjun. The goodwill of the firm is valued at 2 years purchase of super profits based on average profits of last 3 years. The profits for the last three years are Rs. 50,000, Rs. 60,000 and Rs. 55,000 respectively. The normal profits for the similar firm are Rs. 30,000. Goodwill already

appears in the books of the firm at Rs. 75,000. The profit for the first year after Bhim's retirement was Rs. 1, 00,000. Give the necessary journal entries to adjust Goodwill and to distribute profits showing your workings clearly.

6. As per Receipts and Payments Account for the year ended on March 31, 2017, the subscriptions received were Rs. 6, 00,000. Additional Information given is as follows:

   (I) Subscriptions outstanding on 1-4-2016 Rs. 60,000.
   (II) Subscriptions outstanding on 31-3-2017 Rs. 40,000.
   (III) Subscriptions received in advance as on 1-4-2016 Rs. 32,000.
   (IV) Subscriptions received in advance as on 31-3-2017 Rs. 38,000.
   Ascertain the amount of income from subscriptions for the year 2016-17 and show how relevant items of subscriptions will appear in opening and closing balance sheets.

7. Distinguish between Income and Expenditure Account and Receipts and Payments Account on the basis of (i) Nature of items (ii) Period and (iii) Nature.

8. A, B and C are in partnership sharing in 4: 3: 3. They decided to dissolve the partnership firm. At the date of dissolution their creditors amounted to Rs. 16,800 and in the course of dissolution a contingent liability of Rs. 3,500 not brought into the accounts matured and had to be met. Their capitals stood at Rs. 12,000, Rs. 10,000 and Rs. 8,000 respectively. B had led to the firm in addition to Capital Rs. 13,200. The assets realised Rs. 45,670.
   Prepare the Realisation Account and Partner's Capital Accounts. Also show the Bank Account.

9. On 1-4-2017, Fast Computers Ltd. issued 20,000 6% debentures of Rs. 100 each at a discount of 4% redeemable at a premium of 5% after 3 years. The amount was payable as follows:
   On Application Rs. 50 per debenture.
   Balance on Allotment.
   Fast Computers has a balance of Rs. 50,000 in Securities Premium Reserve and Rs. 1, 00,000 in General Reserve. Profit for the year was Rs. 75,000.
   Pass the journal entries for issue of debentures and writing off the loss on issue of debentures.

10. S Ltd. issued 5,000 shares of Rs. 100 each at a premium of Rs. 10 each payable as follows:
    On Application   Rs. 30
    On Allotment   Rs. 40 (including premium)
    On First and Final Call   Rs. 40

All the shares were applied for and instalments received on due dates with the exception of the Allotment and First and Final Call on 100 shares; these shares were forfeited and re-issued as fully paid @Rs. 105 per share. Pass necessary Journal Entries in the books of the company.

1. There are 200 members, each paying an annual subscription of Rs. 1,000; subscription received during the year Rs. 1, 95,000; Subscriptions received in advance at the beginning of the year Rs. 3,000 and at the end of the year Rs. 2,000. Amount shown in Income and Expenditure Account will be:
   (a) Rs. 2, 00,000
   (b) Rs. 1, 96,000
   (c) Rs. 1, 94,000
   (d) Rs. 2, 01,000

2. A company issued 4,000 equity shares of Rs. 10 each at par payable as under: On Application Rs. 3; on allotment Rs. 2; on first call Rs. 4 and on final call Re. 1 per share.
Applications were received for 10,000 shares. Allotment was made pro-rata. How much amount will be received in cash on allotment?
   (a) Rs. 8,000
   (b) Rs. 12,000
   (c) Nil
   (d) None

3. Which of the following items is shown under the head 'Current Assets' while preparing the Balance Sheet of a company?
   (a) Trade Investment
   (b) Underwriting Commission
   (c) Inventories
   (d) Livestock

4. The Debt-Equity Ratio of X Ltd. is 1: 2. What is the effect of conversion of debentures into preference shares on this ratio?

5. A Company purchased Assets of the book value of Rs. 12, 00,000 and Liabilities of Rs. 2, 20,000 of another company for a purchase consideration of Rs. 9, 40,000. The purchase consideration was discharged by the issue of debentures of Rs. 500 each at a discount of 6%. Pass journal entries in the books of purchasing company. Company writes off all capital losses in the first year itself.

6. Journalise the following transactions:

(a) 400 debentures issued at Rs. 960 each, repayable at Rs. 1,000 each.

(b) 400 debentures issued at Rs. 1, 040 each, repayable at Rs. 1,000 each.

(c) 400 debentures issued at Rs. 1, 000 each, repayable at Rs. 1,060 each.

(d) 400 debentures issued at Rs. 960 each, repayable at Rs. 1,060 each.

   (the face value of each debenture is Rs. 1,000)

7. Identify the major heads and sub-heads under which the following items will be shown is the Balance Sheet of a company as per Schedule III of Companies Act, 2013:

(a) Patents

(b) Patents being developed by the Company

(c) Loan payable on demand

(d) Computer and related equipment

(e) Goods acquired for trading

8. Following is the statement of profit and loss of Sun India Ltd. for the year ended 31st March, 2015:

Particulars	Note No.	31-3-2015 (Rs.)	31-3-2014 (Rs.)
Revenue from Operations		25, 00,000	20, 00,000
Other Incomes		1, 00,000	5, 00,000
Employee benefits expenses		60% of Total Revenue	50% of Total Revenue
Other expenses		10% of Employee benefits expenses	20% of Employee benefits expenses
Tax rate		50%	40%

You are required to prepare a Comparative Statement of Profit and Loss of Sun India Ltd. from the given statement of Profit and Loss.

9. The following information is given about a company:

	Rs.
Revenue from Operations	1, 50,000
Gross Profit	30,000
Operating Exp.	7,500
Opening inventory	29,000
Closing Inventory	31,000
Trade Receivables	16,000
Net Fixed Assets	1, 10,000

From the above information, calculate the following ratios:

(a) Gross Profit Ratio

(b) Operating Ratio

(c) Inventory Turnover Ratio

(d) Trade Receivables Turnover Ratio

10. Piyush Ltd. invited applications for issuing 1, 00,000 shares of Rs. 10 each payable as follows:

Rs. 4------- per share on application

Rs. 2------- per share on allotment

Balance on first and final call

Applications were received for 1, 60,000 shares. Full allotment was made to the applicants of 10,000 shares. The remaining applicants were allotted 90,000 shares on pro-rata basis. Excess money received with application was adjusted towards sums due on allotment and call.

Kanika, holding 6,000 shares, who belonged to the category of applicants to whom full allotment was made, paid the call money at the time of allotment. Ruchi, who belonged to the category of applicants to whom shares were allotted on pro-rata basis did not pay anything after application on her 600 shares. Ruchi's shares were forfeited after the first and final call. These shares were later reissued at Rs. 9 per share fully paid up.

Pass necessary journal entries for the above transactions by opening calls in arrears and calls in advance account wherever necessary.

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT-1: [2020-2021]
Computer Science
Class - XII

All questions are compulsory:

1. A token is also called a _____.
2. What in None literal in Python?
3. What do you understand by the term Iteration?
4. Rewrite the following code in Python after removing all syntax error(s).

```
30 = To
for K in range (0,To)
        IF K%4 ==0:
                print(K*4)
        Else:
                print(K+3)
```

5. How are lists different from strings when both are sequences?
6. Why can't Lists be used as keys in a Dictionary?
7. What is a Function?
8. What do you mean by Composition?
9. What is Module, Package and a Library?
10. What possible output(s) are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO.

```
import random
AR = [20,30,40,50,60,70];
FROM = random.randint(1,3)
TO  =random.randint(2,4)
for K in range (FROM, TO+1):
     print(AR[K], end = '#')
```

(i)10#40#70#   (ii)30#40#50#   (iii)50#60#70#   (iv)40#50#70#

All questions are compulsory:

1.   What is unpickling?
2.   Write a method in Python to read the content from a file story.txt line by line and display the same on screen.
3.   What is a Data Structure?
4.   Evaluate the following postfix expression using a stack and show the content of the stack after execution of each operation.
     120,45,20,+,25,15,-,+,*
5.   Software Development Company has set up its new center at Raipur for its office and web based activities. It has 4 blocks of buildings named Block A, Block B, Block C and Block D.

Number of Computers

Block A	25
Block B	50
Block C	125
Block D	10

Shortest distances between various Blocks in meters.

Block A to Block B	60m
Block B to Block C	40m
Block C to Block A	30m
Block D to Block C	50m

(i)Suggest the most suitable place (i.e. block)to house the server of this company with a suitable reason.
(ii)Suggest the type of network to connect all the blocks with suitable reason.
(iii)The company is planning to link all the blocks through a secured and high speed wired medium. Suggest a way to connect all the blocks.
(iv)Suggest the most suitable wired medium for efficiently connecting each

computer installed in every block out of the following network cables.

- Coaxial cable
- Ethernet Cable
- Single Pair Telephone Cable.

6. What is Primary key and Alternate key?
7. Give some examples of DDL commands, DML commands and TCL commands.
8. What is the use of DISTINCT keyword in a query?
9. Write a query to display the Sum, Average ,Highest and Lowest salary of employees grouped by department number.
10. Which record will get inserted in the table by the following code:

```
import mysql.connector as sqltor
mycon = sqltor.connect(host = "localhost", user = "learner", passwd = "fast",
database = "test")
cursor = mycon.cursor( )
query = "INSERT INTO books(title,isbn)VALUES ('{ }', { } )".format
('Ushakiran', '42568987036')
cursor.execute(query)
mycon.commit( )
```

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT – 1
SESSION – 2020 - 2021
MATHEMATICS
CLASS – XII

1. If $y = e^{\tan x}$, prove that $\cos^2 x \frac{d^2 y}{dx^2} - (1 + \sin 2x) \frac{dy}{dx} = 0$.

2. A house wife wishes to mix up two kinds of foods X and Y in such a a way that mixture contains at least 10 units of vitamin – A, 12 units of vitamin – B and 8 units of vitamin – C. The vitamin contents of 1 kg of food X and 1 kg of food Y are as given in the table:

Food	Vit - A	Vit - B	Vit – C
X	1	2	3
Y	2	2	1

If 1 kg of food X costs Rs. 6 and 1 kg of food Y costs Rs. 10. Find the least cost of the mixture which will produce the desired diet.

3. Evaluate: $\int \frac{\cos x \, dx}{(1 - \sin x)^3 (2 - \sin x)}$

4. Solve the differential equation: $x \frac{dy}{dx} = y (\log y - \log x + 1)$

5. Find the area bounded by the curve: $y^2 = 4a^2 (x - 3)$ and the lines $x = 3$ and $y = 4a$.

6. Show the height of the cylinder of greatest volume which can be inscribed in a right circular cone of height h and semi – vertical angle α, is one – third that of the cone. Hence, find the greatest volume of the cylinder.

7. Find the equation of the plane passing through the point (-1, 3, 2) and perpendicular to each of the planes $x + 2y + 3z = 5$ and $3x + 3y + z = 0$

8. Suppose a girl throws a die. If she gets a 5 or 6, she tosses a coin 3 times and notes the number of heads. If she gets 1, 2, 3 or 4, she tosses a coin once and notes whether a head or tail is obtained. If she obtained exactly one head, what is the probability that she threw 1, 2, 3 or 4 with the die.

9. Evaluate: $\int_0^\pi \frac{x \sin x}{1 + \cos^2 x} \, dx$

10. Find a unit vector perpendicular to each of the vectors $(\vec{a} + \vec{b})$ and $(\vec{a} - \vec{b})$, where $\vec{a} = 2\hat{\imath} + \hat{\jmath} + 3\,\hat{k}$ and $\vec{b} = 3\hat{\imath} + \hat{\jmath} + 2\hat{k}$.

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT – 2
SESSION – 2020 - 2021
MATHEMATICS
CLASS – XII

1. If $x^y + y^x = (x + y)^{x+y}$, find $\dfrac{dy}{dx}$.

2. An aeroplane can carry a maximum of 250 passengers. A profit of Rs1500 is made on each executive class ticket and a profit of Rs1000 is made on each economy class ticket. The airline reserves at least 25 seats for executive class. However, at least 3 times as many passengers prefer to travel by economy class than by executive class. Frame the L.P.P how many tickets of each type must be sold in order to maximize the profit for the airline.

3. Evaluate: $\int \dfrac{dx}{a^2 - b^2 \cos^2 x}$, $a > b$.

4. Solve the differential equation: $\dfrac{dy}{dx}$ - $x \sin^2 x = \dfrac{1}{x \log x}$

5. Using method of integration, find the area of the triangle ABC, coordinates of whose vertices are A (1, -2), B(3, 5) and C (5, 2)

6. Show that the height of the cylinder of maximum volume that can be inscribed in a sphere of radius R is $\dfrac{2R}{\sqrt{3}}$.

7. Find the equation of the plane through the line of intersection of the planes $x + y + z = 1$ and $2x + 3y + 4z = 5$ and twice of its y – intercept is equal to three times its z – intercept.

8. Urn A contains two white and 8 black balls; Urn B contains 7 white and 3 black balls and Urn C contains 5 white and 3 black balls. A fair die is thrown. If die turns up 1, 2, or 3, a ball is drawn from urn A, if it turns up 4 or 5, a ball is drawn from urn B; otherwise a ball is drawn from Urn C. A

black ball is drawn, find the probability that it is drawn from urn B.

9. Evaluate: $\int_0^\pi x \log(\sin x)\, dx$

10. If $\vec{a} = \hat{\imath} + \hat{\jmath}$, $\vec{b} = \hat{\imath} - \hat{\jmath}$ and $\vec{c} = \hat{\imath} + 2\hat{\jmath} + 3\hat{k}$, if n is a unit vector such that $\vec{a}.\vec{n} = 0$ and $\vec{b}.\vec{n} = 0$, then show that $\vec{c}.\vec{n} = 3$.

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT - I
BIOLOGY
CLASS-XII

1. What is polyembryoni and how can it be commertially exploited?
2. Mention the importance of LH surge during menstrual cycle.
3. STDs can be considered as self invited diseases. Comment.
4. Enlist the steps of controlled cross pollination. Would emasculation be needed in a cucurbit plant? Give reasons to support your answer.
5. Discuss the significance of heavy isotope of nitrogen in the Meselson and Stahl's experiment.
6. What are interferons? How do interferons check infection of new cells?
7. Why is distillation required for producing certain alcoholic drinks?
8. Discuss the advantages of GMO.
9. Define "zero population growth rate". Draw its age pyramid.
10. Elaborate how invasion by an alien species reduces the species diversity of an area?

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT - II
BIOLOGY
CLASS-XII

1. Are parthenocarpy and apomixis different phenomenon? Discuss their benefits.
2. Meiotic division during oogenesis is different from that in spermatogenesis.Explain how and why?
3. What are the assisted reproductive techniques practised to help infertile couples? Describe any two techniques.
4. In a Mendelian monohybrid cross, the F_2 generation shows identical genotypic and phenotypic ratios. What does it tell us about the nature of alleles involved? Justify your answer.
5. Discuss the process of translation in details.
6. Describe H_2L_2, a molecule involved in your immunity.
7. Describe the structure of pBR322.
8. Briefly describe the processes in preparing a recombinant DNA.
9. Does light factor affect the distribution of organisms? Write a brief note giving suitable examples of either plants or animals.
10. Explain briefly "rivet popper hypothesis" of Paul Ehrlich.

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT - I
BIOTECHNOLOGY
CLASS-XII

1. What are Restriction Enzymes?How are they classified?
2. How can screening of recombinants be done? Explain.
3. How does the catalytic triad system of Chymotrypsin function?
4. What are Nutraceutical proteins?
5. What are SNPs? Mention their possible application.
6. EST technique cannot give us the exact number of genes.Why?
7. Differentiate between Batch and Fed-Batch culture.
8. How can sterelization of microbial media be done?Mention the instrument used in the process and the parameters.
9. What is totipotency?
10. Discuss the various steps involved in Plant Tissue Culture.

BURNPUR RIVERSIDE SCHOOL, BURNPUR
ASSIGNMENT - II
BIOTECHNOLOGY
CLASS-XII

1. Enlist the ideal features of a vector.
2. What are Plasmids? Mention the features of pBR322.
3. Explain the working features of Mass Spectrometer.
4. Mention the two techniques involved in 2D-Gel Electrophoresis.
5. What is BLAST?Mention the principles involved in the process.
6. Mention the various kinds of analysis which can be done using Bioinformatics tools.
7. Differentiate between Fed-Batch Culture and Continuous Culture.
8. What are Somatic hybrids and Cybrids?Give an example of somatic hybrid.
9. What is Hybridoma technology? Explain the steps.
10. Mention the application of Erythropoietin and t-PA.

1. Sometimes defects are created in crystals by the addition of outside substances. It is known as impurity defect or doping. as a result electrical conductivity of the crystal can increase. Even insulators can we converted into semiconductors. The defect resulting from doping are also known as electronic defects.

a. What type of semiconductor is created by doping group 14 elements with that of group 15 elements?

b. What is the nature of charge present in the holes in p type semiconductors?

c. Name the type of semiconductor resulting from Ga - As combination.

d. What is the common name of the defect resulting from n and P type semiconductors?

e. Cheaper single crystal is doped with Indium at one end and arsenic Era other end, what do you get?

2. What is the freezing point of 0.4 molal solution of acetic acid in benzene in which it dimerizes to the extent of 85%. Freezing point of benzene is 278.4 Kelvin and its molar heat of fusion is is 10.0 42 kilo joule per mole.

3. Give reasons:

a.rusting of iron pipe can be prevented by joining it with a piece of magnesium.

b. Conductivity of an electrolyte solution decreases with the decrease in concentration.

c. Photo weak electrolyte molar conductance in dilute solution increases sharply as its concentration in solution is.

d. Why does iron gain weight in rusting?

e. Why does the cell potential of mercury cell remain constant throughout its life?

4. Law of mass action is based on the theoretical studies only and this regards a chemical reaction as a single step reaction. However practically most of the chemical reactions proceeds in steps having different speeds. The slowest of these Steps is known as the rate determining step and the concentration of the reacting species involved in this contribute towards the reaction rate. The sum of the coefficients of the reacting species that are involved in the rate determining step, also called rate equation, represents the order of the reaction.

a. What is the name of the chemical reaction in which the reaction rate is independent of the concentration of the reacting species?

b. Mention the units of the rate constant for the reaction of second order.

c. What is the order of the reaction whose rate constant has the same unit as rate of reaction?

d. A reaction is 50% complete in 2 hours and 75% complete in 4 hours. What is its order?

e. Calculate the half life period for a first order reaction having ke equal to 4 per min.

5. Give reasons for the following:

a. Rough surface of catalyst is more effective than smooth surface.

b. Smoke is passed through charged surface before allowing it to come out of chimneys in factories.

c. Neon gets more easily adsorbed over charcoal then He.

d. Why is ferric chloride preferred over potassium chloride in case of cut leading to bleeding?

e. Colloidal gold is used for intramuscular injection.

6. Account for the following:

A. SF_6 is Kinetically and inert compound.

B. Sulphur have more tendency for catenation then oxygen.

C. Bhoot Oxygen and fluorine stabilize high oxidation States but the ability of oxygen to stabilize the higher oxidation State exceeds than of fluorine.

D. The structures of xenon fluorides cannot be explained buy valence bond approach.

E. The stability of higher oxidation State group 15 elements decrease down the group.

7. Why is chemistry e of all lanthanides identical?

8. Write the hybridization of nickel in nickel tetracarbonyl and also write the sape and magnetic nature of the complex.

9. Write notes on on, carbylamine reaction, aldol condensation, hofmann degradation reaction, hvz reaction, swarts reaction.

10. Convert the following:

A. Toluene to benzoic acid, B. Benzaldehyde to aniline, C. Ethyne to ethanal, D. Ethane to 2 butyne, E. Propanone to iodoform.

BURNPUR RIVERSIDE SCHOOL
    CHEMISTRY ASSIGNMENT
       CLASS-XII, 2020-2021

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1. Metallic solids are different from the ionic solids in the sense that only one type of atoms are involved in their formation where is in the ionic solids, oppositely charged ions participate. The main constituents of these solids are kernels and valence electrons. Each kernel is surrounded by a number of valence electrons and vice versa. These good conductors of heat and also malleable and ductile in nature.

a. What does kernel represent?

b. Why do metals conduct electricity in the solid state?

c. How will you account for malleability and ductility in the metals?

d. How does temperature affect the conductivity of metals?

e. Why are metals lustrous?

2. 0.5 gram KCL was dissolved in hundred gram of water and the solution originally at zero degree celsius froze at-0.2 4 degree Celsius. Calculate the percentage ionization of the salt (Kf per thousand gram of water = 1.86 Kelvin kg per mole).

3. A lead storage battery is the most important type of secondary cell having an LEAD anode and a grid of lead packed with PbO2 .A 38% solution of sulphuric acid is used as electrolyte (density equal to 1.294 gram per ml). The battery holds 3.5 litre of the acid. During the discharge of the battery, the density of sulphuric acid falls to 1.139 gram per ml (20% H2 SO4 by mass).

a. Write the reaction taking place at the cathode when the battery is in use.

b. How much electricity (coulombs) is required to carry out production of one mole of PbO2?

c. What is the molarity of sulphuric acid before discharge?

d. Write the products of electrolysis when dilute sulphuric acid is electrolysed using platinum electrodes.

4. A first order reaction is 50% complete in 50 minutes at 300 Kelvin and the same reaction is again 50% complete in 25 minutes at 350 Kelvin. Calculate activation energy of the reaction.

5. In the following questions a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

a. Assertion and reason both are correct and the reason is correct explanation of assertion.

b. Assertion and reason both are correct but reason does not explain assertion.

c. Assertion is correct but reason is incorrect.

d. Both assertion and reason are incorrect.

e. Assertion is incorrect but reason is correct.

A. Assertion : An ordinary filter paper impregnated with collodion solution stops the flow of of colloidal particles.
Reason : Pore size of the filter paper becomes more than the size of colloidal particle.

B. Assertion : colloidal solutions do not show Brownian movement.
Reason : colloidal particles are large in size.

C. Assertion : coagulation power of aluminium tripositive ion is more than that of sodium ion.
Reason : Brownian movement is responsible for stability of SOLs.

D. Assertion : detergents with low CMC are more economical to use.
Reason : cleansing action of detergents involves the formation of micelles. These are formed when the concentration of detergents becomes equal to CMC.

6. Give the formula and describe the structures of a noble gas species

which is isostructural with: a. Icl4 mono negative, b. IBr2- c. BrO3-.

7. Paramagnetic substances are those which are attracted towards the applied magnetic field. This character arises due to to the presence of unpaired electrons in (n-1)d orbitals. As the number of these electrons increases the paramagnetic character tends to increase. The magnetic moment arises because of orbital motion as well as due to spin motion. The magnetic moment calculated from spin only formula is given as equal to to root under n(n+2), where n is the the number of unpaired electrons.

a. Out of the elements chromium and manganese which has more magnetic moment?

b. Calculate the magnetic moment of copper dipositive ion.

c. Why is magnetic moment of [Ni(CN)4]2- zero?

d. Why is Zn 2+ ion diamagnetic in nature?

e. Out of scandium and Vanadium which has more unpaired electron in 3d-orbital?

8. Compound A(C8H10O) upon treatment with alkaline solution of iodine gives a yellow precipitate. The filtrate on acidification gives off white solid B (C7H6O2). Write the structures of A and B.

9. Write notes on: 1. Finkelstein reaction, 2. Cannizzaro's reaction, 3. Hell volhard zelinsky reaction, 4. Carbylamine reaction, 5. Wolf Krishner reaction.

10. Convert the following:

A. Ethylene to ethanal, B. Toluene to benzoic acid, C. Benzyl alcohol to Aniline, D. Benzaldehyde to 1 phenyl ethanol, E. Propanone to Iodoform.

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1. Given a DataFrame mdf as shown below:

	A	B	C
0	1	2	3
1	4	5	6

   Find out the errors in following statements.

   i.   mdf.drop(["Total", "Order"], axis = 1)
   ii. mdf.drop(["A", "D"])
   iii. mdf.drop(["A", "D"], axis = 1)

2. How a Series data structure different from a dataframe data structure?

3. Name the functions you will use to create a
   (i)   line chart,   (ii) bar chart

4. What do you understand by 'Data Visualization'?

5. Write down the advantages offered by the CSV format.

6. What is the function of Skiprows argument?

7. Differentiate between Primary Key and Candidate Key.

8. Differentiate between Char and Varchar data type.

9. Write a query to create a string from the ASCII values 70, 65, 67, 69.

10. What is the use of the INSTR function? Also, write down its syntax.

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1. Explain what the following statements are doing? *df* is the name of the DataFrame.

    i.   df.iloc[:5,]

    ii.   df.iloc[5, 0]

2. What is "data type"?

    What are the main objectives of data types?

3. Differentiate between MAN and WAN.

4. What are the advantages of Star Topology?

5. Differentiate between a static web page and a dynamic web page.

6. Write two advantages and two limitations of E-mail.

7. What are the major amendments of IT ACT (2008)?

8. What are the benefits of e-Waste Recycling?

9. Differentiate between Adware and Malware.

10. What measures should you take to keep data secure?

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BURNPUR RIVERSIDE SCHOOL, BURNPUR
BUSINESS STUDIESASSIGNMENT-- I
Class – XII COM

1	Keeping in view the changes in the consumer demands and preferences 'Tastemaker Bakery' has reduced the sugar and fat content in its products. This approach of the business shows that business is (a) An intangible force (b) A group activity (c) A dynamic function (d) A multi-dimensional activity.
2	Subsidy to cotton textile industry is an example of _____ environment (a) Economic (b) Social (c) Legal (d) Political
3	The technique of differential piece rate system was developed by Taylor in order to (a) Discriminate between efficient and inefficient workers (b) Reward the efficient worker (c) Motivate the inefficient workers to perform better (d) All of the above
4	Explain the first three steps in the process of planning.
5	The Principal of XYZ Public School ordered the staff that they will be allowed to sit in the staffroom situated in their block. No teacher will be allowed to sit in other staff room. During school's hour, teachers can meet teachers of their department only for work-related matters. He wants each teacher to strictly work as per rules and directions given by him. Identify the type of organisation in this and explain any three disadvantages of such organisation.
6	A, N and P are the owners of a handicraft unit in the urban area of Dibrugarh in Assam, which is involved in manufacturing and marketing of

	SitalPati, traditional mats and Jappi(the traditional headgear). They decided to shift this manufacturing unit to a rural area with an objective of reducing the cost and providing job opportunities to the locals. They followed functional structure in this organization with a view to increasing managerial and operational efficiency. They assessed and analysed the type and number of employees required, keeping in mind that they had to encourage the women and the people with special needs belonging to the rural area. States the step mentioned above and also explain next three steps that they have to undertake for obtaining a satisfied workforce for their handicraft unit.	
7	Smita had been working as an assistant manager with J.Ltd for the last ten years. She is very popular amongst her colleagues because of her commitment and dedication towards the work. When the manager, senior to her, retired all the colleagues thought that now Smita would be promoted. But to everyone's surprise the vacant post was filled by an outsider, Mrs Rita. Smita felt demoralized and her performance started declining. She would absent herself often and could not meet her targets. Mrs.Rita was a good leader, who would not only instruct her subordinates but would also guide and inspire them. She noticed Smita'sbehaviour and felt that her performance could be improved. She started involving Smita in decision making issues related to the organisationand made her a part of high level joint management committee.Smita is now punctual in office and her performance started improving. a) Name the element of the function of management which help Rita to improve Smita's behavior. b) Explain any three features of that element of function of management	
8	Why is controlling important in each organization? Explain any five in support of the above statement.	
9	In a manufacturing business the purchase department purchased 100 tonnes of raw materials for production department. Although only 80 tonnes was needed by the production department. Due to this, goods were over-produced and not accepted by sales department. As a result some finished goods remained unsold.	

		(a) Which aspect of management is lacking here?	
		(b) Explain any four characteristics of that aspect.	
	10	Explain any six factors to be considered for estimating the fixed capital requirements of a company.	

BURNPUR RIVERSIDE SCHOOL, BURNPUR
BUSINESS STUDIESASSIGNMENT--- II
Class – XII COM

1	In order to improve upon its competitive edge, K. Ltd. has changed the packaging of its hair care products. They are now available in a consumer friendly design, which has a nozzle attached to the lid so that at the time of usage, the consumer doesn't need to open the cap of the bottle. Name the marketing function being explained above. (a) Promotion (b) Product designing and development (c) Customer Support Services (d) Physical Distribution
2	One of the common irregularities noted by the Securities and Exchange Board of India during the inspection of a stock exchange was that it was dealing with unregistered sub-brokers. Identify the related function of the Securities and Exchange Board of India. (a) Regulatory function (b) Protective function (c) Development function (d) None of these
3	In case an aggrieved consumeris not satisfied with the decision of the State Commission, he can make a further appeal in (a) District Forum (b) National Commission (c) Supreme Court of India (d) None of these
4	"Money market instruments are more liquid than capital market instruments". Comment.
5	Explain any three rights given in the Consumer Protection Act, 1986.
6	Sonu purchased a medicine from ' Alpha Medical Stores' for his wife who had stomach pain. But even after giving the medicine. Wife's condition did not improve and she had to be admitted to a nearby hospital for treatment. Doctors on examination found that the medicines given to Sonu's wife were spurious. Sonu complained about this to 'Alpha Medical Stores'. As a result Alpha Medical decided to file a complaint against the manufacturers

		in the consumer court. (a) Can Alpha Medical Store lodge the complaint? (b)Who can file a complaint? Give any two.	
	7	Incorporated in 2009, R.Ltd. is one of the leading manufacturers and marketers of dairy based branded foods in India. In the initial years its operations were restricted only to collection and distribution of milk. But over the years it has gained a reasonable market share by offering a diverse range of diary based products including fresh milk, flavoured yogurt, ice creams, butter milk, etc. In order to raise capital to finance its expansion plans, the company has decided to approach capital market through a mix of Offer for sale of Rs. 4 crore shares and a public issue of Rs. 2 crore shares In context of the above case (a) Name and explain the segment of capital market being approached by the company. (b) Explain any four methods of floatation used by the company to raise required capital.	
	8	What are the factors affecting determination of the price of a product or service. Explain any six.	
	9	Differentiate between Advertising and Personal Selling on the basis of (a) Form (b) Media used (c) Coverage (d) Flexibility (e) Feedback (f)Cost	
	10	Explain any six functions of marketing.	

BURNPUR RIVERSIDE SCHOOL, BURNPUR

ASSIGNMENT- 2
SUBJECT- ECONOMICS
CLASS- XII

Answer the following questions:

1	Define exchange rate.	1
2	What is balance of payment?	1
3	Define government budget.	1
4	What is fiscal policy?	1
5	What is Trade Cycle?	1
6	What will be the value of Multiplier if MPC=0,1/2 and 3/4	3
7	Briefly explain the inflationary gap situation.	3
8	What is marginal propensity to consume? How is it related to marginal propensity to save?	4
9	An economy is passing through recessionary phase. What measures do you suggest to solve it?	4
10	How is equilibrium level of income and employment determined in Keynesian theory?	6

BURNPUR RIVERSIDE SCHOOL BURNPUR
ASSIGNMENT- 1
SUBJECT- ECONOMICS
CLASS- XII

Answer the following questions:

1	Why are regional and economic groupings formed?	1
2	What similar developmental strategies have India and Pakistan followed for their respective developmental paths?	1
3	What is meant by environment?	1
4	What happens when the rate of resource extraction exceeds the rate of their regeneration?	1
5	Define infrastructure.	1
6	What suggestions can you give to solve the problem of unemployment of India?	3
7	Do you think loans should be written off in case farmers find it difficult to pay off.	3
8	Migration leads to human capital formation. How?	4
9	What, in your opinion, is the lasting solution to the problem of poverty in India?	4
10	Briefly explain the demerits of LPG policies.	6

A.   Answer the following questions in 30-40 words.

1.   "We've all a great deal to reproach ourselves with", said M Hamel. Comment.
2.   The author finds two distinct worlds in Firozabad. What are these?
3.   How does the narrator describe Galesburg, Illinois?
4.   Why has the poet's mother been compared to the 'late winter's moon'?
5.   What are the different kinds of wars mentioned in '*Keeping Quiet*'? What is the poet's attitude towards these wars?
6.   Why is 'grandeur' associated with the 'mighty dead'?

B.   Answer the following questions in 120-150 words.

7.   Describe the efforts made by William Douglas to overcome his fear of water.
8.   *'The Ratrap'* is a story which shows that basic human goodness can be brought out by understanding and love. Explain

C.   Writing Skill

9.   Star Travels, 284, Rohini Enclave, Delhi, offers a package tour for 3 nights / 4 days in Mauritius for Rs. 20,000 per person. Draft an advertisement for publication in a national daily in about 50 words. Give necessary details.

10. You are Manish / Manisha Tripathi. You have been invited by the Lions Club to act as one of the judges for a fancy dress competition for children. But due to previous engagement you cannot accept the invitation. Write a formal reply, in about 50 words, to the President of the Club regretting your inability to accept the invitation.

A. Answer the following questions in 30-40 words.

1. Why did Gandhi tell the court that he was involved in a 'conflict of duties'?
2. What forced Dr. Sadao to be impatient and irritable with his patient?
3. What was usually the basic storyline of the tale that Jack told Jo?
4. What message does Stephen Spender convey through the poem '*An Elementary School Classroom in a Slum*'?
5. Explain: 'The massive weight of Uncle's wedding band / Sits heavily upon Aunt Jennifer's hand'.
6. Why did Evans not take off his hat when Jackson ordered him to do so?

B. Answer the following questions in 120-150 words.

7. Give a brief character sketch of the Governor of Oxford Prison based on your understanding of the story '*Evans Tries an O Level*'.
8. The lesson '*On The Face of It*' is an apt depiction of the loneliness and sense of alienation experienced by people on account of a disability. Explain.

C. Writing Skill

9. As the President of the Literary Club of your school you are organizing a programme on Public Speaking for XI and XII standard students of your school. Write a notice, in about 50 words, giving necessary details.

10. You are Rahul / Shruti. You want to invite your friends and relatives at the House-warming ceremony. Write an invitation in about 50 words.

1 Define human geography.
2 What are the three components of population change?
3 Describe the rural-urban composition of the population in India.
4 What are the three basic areas of human development?
5 Future of shifting cultivation is bleak. Discuss.
6 Why do some states of India have higher rates of work participation than others?
7 What are the different causes of migration?
8 What are the different indicators of economic attainments to determine the human development in India.
9 Classify towns on the basis of population size.
10 Which river has the highest replenishable ground water resource in India?

1   Give an account of the distribution of mica in India.
2   What are the social benefits of ITDP in the Bharmaur tribal region?
3   Describe the problem of slums in India.
4   What are the different sources of water pollution?
5   What do you mean by physiological density?
6   Differentiate between rural marketing centres and urban marketing centres.
7   How science and technology helped population growth?
8   What are the four pillars of human development?
9   Write the different features of mixed farming.
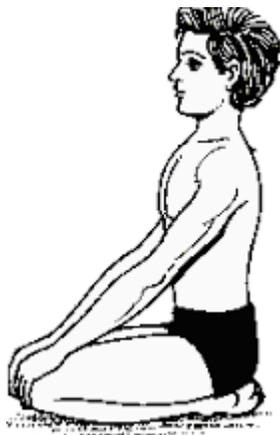10 What are Isochrone lines?

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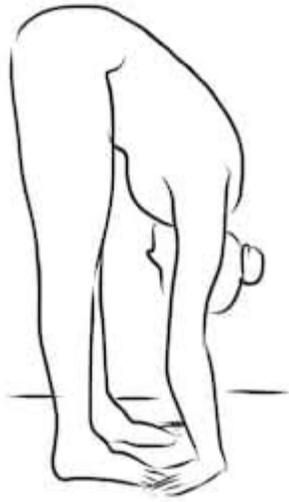# BURNPUR RIVERSIDE SCHOOL, BURNPUR
Assignment Set A
Class – XII

Subject: Physical Education
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1   Which one of the following is not an objectives of planning in sports?   1
      a. Management of a tournament   b. Finding out the causes of failure.
      c. Distributing work according to the ability   d. Achieving the target on time.

2.   Which of the following asanas is beneficial in reducing obesity?   1
      a. Matsyasana   b. Gomukhasana   c. Pachimottasana   d. Vajrasana

3.   Nutrients are the chemicals in food which ……………?   1
      a. are needed for replacement of tissues.
      b. are essential for growth
      c. our body needs
      d. All of the above

4.   The Back Scratch Test for upper body flexibility is executed in a position of ….   1
      a. Sitting on the bed   b. jogging   c. standing   d. Both (a) and (b)

5.   Identify the below given asanas and write the name.   2
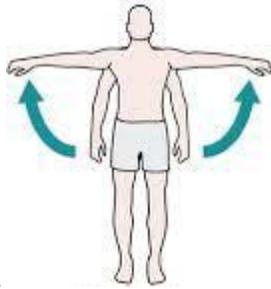

……………………….

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……………………………………………….

……………………..

6.   Identify the human movement and give their name.   2

a.. ………………………….

b. …………………………….
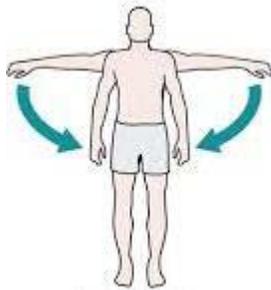
c. ……………………………….

d. ……………………………………

7. Suggest exercises, a corrective measure for curing Lordosis.   2
8. What do you mean by Mesomorphic and Ectomorphic personalities?   2
9. Write a short note on postural deformities.   3
10 Define flexibility and explain the methods of flexibility development.   3

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Code:

BURNPUR RIVERSIDE SCHOOL, BURNPUR
Assignment
Class – XII

Subject: Physical Education

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1	Briefly explain any five types of coordinative abilities.	5
2.	Justify the statement, "participation in game and sports results in all – round development of personality".	5
3.	What are the effects of exercise on the respiratory system?	5
4.	Case Based: Pinki is appointed as a sports coach. She begins her training by measuring the cardiovascular fitness of all the athletes. Which test she administers and why?	5
5.	Discuss the different types of motor skill. Also enumerate and describe the factors effecting motor development.	5
6.	State any five minerals in brief.	5
7.	What are the five points disability etiquette to be followed with persons who are unable to hear?	5
8.	Explain what do you understand by league tournament? Draw a fixture of 9 teams in a single league using staircase method.	5
9.	Case Based: Anubhav takes yoga classes. Mrs Sharma with a BMI of 33.2 asked to show him yogic asana to reduce obesity. Is Mrs. Sharma obese? What are the reasons for obesity? Which asanas help in reducing obesity? Explain the procedure of any asanas.	5
10	Briefly explain the Newton's First and Second Law of Motion.	5

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