HOLIDAY HOMEWORK

CLASS XI – ENGLISH

Ques 1:

Pages from a Father's Heart

Read the poem *"Father to Son"* by Elizabeth Jennings and present a creative response in the form of an *illustrated diary*. Explain the central theme of the poem, describe the emotional conflict between the father and the son, and discuss the message of love, loss, and reconciliation conveyed by the poet. Support your response with relevant illustrations or drawings, and include a personal reflection of 150–200 words expressing your understanding and feelings about the poem.

Ques 2: Assume the role of a literary designer and critic. Read *"We're Not Afraid to Die… if We Can All Be Together"* and prepare a critical review on an A4-size sheet in which you analyse the plot, setting, characters, themes, and message of the story. Along with the written review, create a *thematic cover artwork* that visually represents the spirit of courage, survival, and family unity portrayed in the text, drawing inspiration from the original voyagers' experience.

Given below are **3–4 original voyage / survival journey movies** which focus on **courage, endurance, nature, and human spirit**, similar to *"We're Not Afraid to Die… if We Can All Be Together"*:

To help you understand the voyage and survival theme, watch any ONE of the following films before attempting the task:

1. **Lifeof Pi (2012)**
   Voyage theme: Survival at sea
   This movie tells the extraordinary journey of a young boy stranded in the Pacific Ocean after a shipwreck. Alone on a lifeboat with a tiger, Pi survives through courage, faith, and intelligence. The film beautifully explores the bond between humans and nature, inner strength, and hope during extreme adversity.
2. **Kon-Tiki (2012)**
   Voyage theme: Ocean expedition
   Based on a true story, this film follows six explorers who sail across the Pacific Ocean on a primitive raft to prove an ancient theory. It highlights teamwork, bravery, and the dangers of the sea, making it suitable and inspiring for teenagers.
3. **The Old Man and the Sea (1999)**
   *Voyage theme:*Man vs nature
   Adapted from Ernest Hemingway's novel, this film portrays an old fisherman's solitary struggle with the sea while catching a giant marlin. It emphasizes perseverance, dignity, and respect for nature. The slow pace and deep message suit mature young viewers.
4. **The Finest Hours (2016)**
   Voyage theme: Sea rescue mission
   Based on a real Coast Guard rescue, the movie shows extraordinary bravery during a violent storm at sea. It focuses on teamwork, leadership, and selflessness, making it both thrilling and inspiring for adolescents.

SUBJECT – CS & IP

Holiday Homework, class 11 CS

Write separate program in Python for the following

Q1. Check a number is odd or even

Q2. Input month number and print number of days in that month

Q3. Calculate telephone bill as per given rules

1. First 100 calls free
2. next 100 calls Rs 1/call
3. next 100 calls Rs 0.5/call
4. next all calls Rs 0.4/call
5. Monthly rent Rs. 100

Q4. Input a character and check it for alphabet or digit or special character.

Also check it for vowel if it is an alphabet

Q5. Print the factorial of a given +ve number Example: 4! = 4X3X2X1 = 24

Q6. Print the reverse of an integer number and check it for palindrome ex 272 = 272

Q7. Input a number and Check it for prime number

Q9. Print first N terms of fibonacci series Example: 0 1 1 2 3 5 8 13 21 …….

Q10. Input N numbers into a list and increase the value of odd elements by 2 & even elements by 3.

i.e Input: 1 5 9 6 2 7 Output: 3 7 11 9 5 9

Q11. Input N numbers into a list and reverse the list.

i.e Input: 10 20 30 40 50 60 Output: 60 50 40 30 20 10

Q12. Input N & M numbers in List A & List B and copy odd elements of both A & B into third list C.

i.e If A : 3 10 9 7 12 and B : 4 7 9 6 then C : 3 9 7 7 9

Q13. Left Shift Ex. Input: [10,20,30,40,50] required output : [20,30,40,50,10]

Q14. Input a string and a desired character. Now print the position of the character if present in the string.

Q15. Input a string and a desired character. Now print the position of the character of its last appearance in the string.

Q16. Input a string & a character. Now print the number of occurrences of the character.

Q17. Input roll number and marks of 5 students from keyboard into a list and print highest marks

Q18. Input roll number and name of 5 students from keyboard into a dictionary and print details.

Q19. Input roll number and marks of 3 subjects of 5 students from keyboard into a dictionary and print average marks

Q20. Input roll number, name and marks of 5 students from keyboard into a list of dictionaries as per given example

L=[{“rno”:11, “Marks”:99}, {“rno”:17, “Marks”:98}, {“rno”:12, “Marks”:79}, {“rno”:14, “Marks”:77}, {“rno”:12, “Marks”:99}]

Write the output of following

a.

```
a = "Python "
b = 13
print (a + b)
```

b.

```
a, b = 5.0, 2
print(a//b)
```

c.

```
x, a, b = 0, 5, 5
if a > 0:
    if b < 0:
        x = x + 5
    elif a > 5:
        x = x + 4
    else:
        x = x + 3
if b>2:
    x = x + 2
print(x)
```

d.

```
i = 1
while True:
```

```
    if i%3 == 0:
        break
    print(i)
    i += 1
```

e.

```
x = 123
for i in x:
    print(i)
```

f.

```
L = [1, 3, 5, 7, 9]
print(L.pop(-3), end = ' ')     #
x=L.remove(3)
print(x, end = ' ')    #
print(L)   #
```

g.

```
x = [10,20,30]
for i in x:
    i=i+2
    print(i,end= "   ")
print( )
print(x)
```

h.

```
x = [10,20,30]
for i in range(len(x)):
    x[i]=x[i]+2
print(x)  #
```

i.

```
st='ramjas'
print(st[-3: :1])
print(st[0:3:1])
print(st[:3])
```

j.

```
nameList = ['Mohit', 'Deepak', 'Gunin', 'Dhruv']
print (nameList[1][-1], nameList[2][0], nameList[-2][-1])
```

CLASS XI:ECONOMICS

WINTER HOLIDAY HOMEWORK

Complete the following questions in notebook.

Q1. In the following frequency distribution, if the arithmetic mean is 45.6, find the missing frequency.

Wages	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	5	6	7	X	4	3	9

Q2.Calculate mean by step deviation method.

Runs	5-15	15-25	25-35	35-45	45-55	55-65
Frequency	8	12	6	14	7	3

Q3.Find out the Median of the following series:

Size	15	20	25	30	35	40
Frequency	10	15	25	5	5	20

Q4. The marks obtained by 80 students of Class XI in a mock test of Mathematics are given below in the table. Find the Median and mode of the following data.

Marks	0 and above	10 and above	20 and above	30 and above	40 and above	50 and above	60 and above	70 and above	80 and above	90 and above	100 and above
No. of Students	80	77	72	65	55	43	28	16	10	8	0

Q5. From the following data, determine the mode by grouping method:

Size	4	5	6	7	8	9	10
Frequency	6	5	7	2	3	7	3

Q6. Graphically calculate Median.

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	11	20	12	6	5

Q7. Calculate the correlation coefficient between the heights of fathers in inches (X) and their sons (Y).

X	65	66	57	67	68	69	70	72
Y	67	56	65	68	72	72	69	71

Q8. Use step deviation method to find out the coefficient of correlation from the following data:

X	300	350	400	450	500	550	600	650	700
Y	1600	1500	1400	1300	1200	1100	1000	900	800

Q9. Draw and explain a **Production Possibility Curve (PPC)**. What does a rightward shift of PPC indicate?

Q10. With the help of a demand schedule, show the effect of **increase in consumer income** on demand for:

a. Normal goods

b. Inferior goods

Q11.A consumer consumes 4 units of a good. The marginal utility of the 4th unit is zero.

a. Is the consumer in equilibrium? Give reasons.

b. What will happen if the consumer consumes more than 4 units?

Q12. During a festival season, demand for a product increases but supply remains constant.

a. Explain how equilibrium price changes.

b. Relate your answer to real-life market situations.

Q13. If price falls from ₹30 to ₹24 and quantity supplied falls from 120 units to 96 units, calculate Price elasticity of Supply.

Q14. Suppose the equilibrium price of rice is ₹40 per kg. The government fixes a maximum price of ₹30 per kg.

a. Identify the type of price control

b. Explain its impact on demand and supply

Q15.Explain why the **gap between AC and AVC decreases** as output increases.

Psychology – Class XI

Winter Holiday Home Work

Worksheet (Chapters 1–8)- Practice based Questions.

Instructions:
• Answer all questions.
• Read picture-based questions carefully.
• Use real-life examples wherever possible.

Section A: Objective Type Questions

(1 mark each)
1. Psychology is best defined as the scientific study of:
a) Society
b) Mind only
c) Behaviour and mental processes
d) Emotions only

2. The method best suited for studying behaviour in natural settings is:
a) Experiment
b) Observation
c) Interview
d) Case study

3. Paying attention to only relevant stimuli while ignoring others is known as:
a) Divided attention
b) Selective attention
c) Sustained attention
d) Shift of attention

4. Learning by observing and imitating others is known as:
a) Trial and error learning
b) Insight learning
c) Observational learning
d) Verbal learning

5. Memory that holds information for a very brief duration is:
a) Long-term memory
b) Working memory
c) Sensory memory
d) Episodic memory

6. _____ are environmental agents that cause deviations in development.

7. Thinking that produces many possible answers is called:
a) Convergent thinking
b) Critical thinking
c) Divergent thinking
d) Logical thinking

8. According to Maslow, self-actualisation refers to:
a) Need for love
b) Need for safety
c) Fulfilment of one's potential
d) Physiological needs

Section B: Very Short Answer Questions

(2 marks each)
1. Define psychology.
2. What is a hypothesis?
3. What is Object permanence?
4. Define learning.
5. What is short-term memory?
6. What is problem solving?
7. Define motivation.
8. What is emotion?

Section C: Short Answer Questions

(3–4 marks each)

Chapter 1 – What is Psychology?
1. Explain any two goals of psychology with suitable examples.
2. Distinguish between basic and applied psychology.

Chapter 2 – Methods of Enquiry in Psychology
3. Explain the experimental method. Mention one limitation.
4. What is observation? Explain any two types.

Chapter 3- Human Development
5. What are Teratogens?
6.What are the challenges of adolescence.

Chapter 4 – Sensory, Attentional and Perceptual Processes
7. Explain selective attention with an everyday example.
8. What are perceptual constancies? Name any two.

Chapter 5 – Learning
9. Explain the classical conditioning experiment using equations.
10. How does reinforcement affect learning?

Chapter 6 – Human Memory
11. Describe the three stages of memory.
12. Explain any two causes of forgetting.

Chapter 7 – Thinking
13. Differentiate between convergent and divergent thinking.
14. Explain insight learning with an example.

Chapter 8 – Motivation and Emotion
15. Differentiate between intrinsic and extrinsic motivation.
16. Explain the motivation cycle.

Section D: Application-Based Questions

(4–5 marks each)

1. A teacher notices that students perform better when lessons include activities and discussions.
Explain this using principles of learning.
2. A student is unable to recall answers during exams despite studying well.
Explain this using factors affecting memory and forgetting.
3. Rohit can easily recognise his friend even in different clothes and lighting conditions.
Which perceptual principle explains this? Explain.
4. A child learns table manners by watching parents and elders.
Identify the type of learning involved and explain.
5. Meera studies because she enjoys learning new things, not because of marks or rewards.
Identify the type of motivation and explain its benefits.

Section E: Picture-Based Questions

Picture 1: Selective Attention

(Picture shows a student studying at a desk while noise and distractions are around)

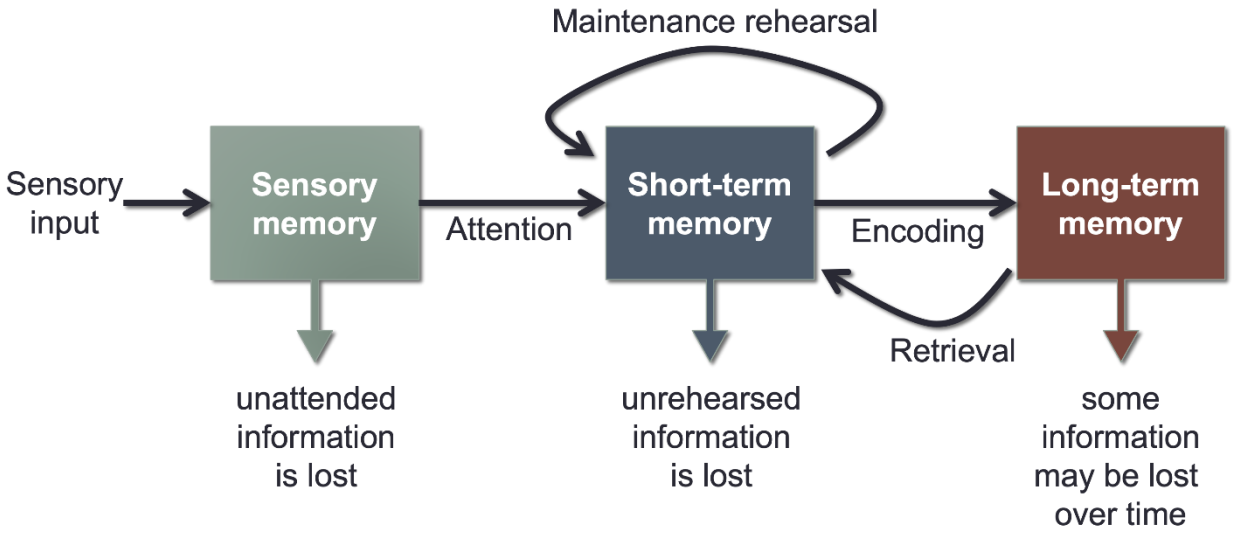
a) Which psychological process is depicted in the picture?
b) Name the chapter related to this concept.
c) How does this process help in learning?

Picture 2: Learning through Observation

(Picture shows a child copying an elder's behaviour)

a) Identify the type of learning shown.
b) Who gave this theory?
c) Mention one real-life example of this learning.

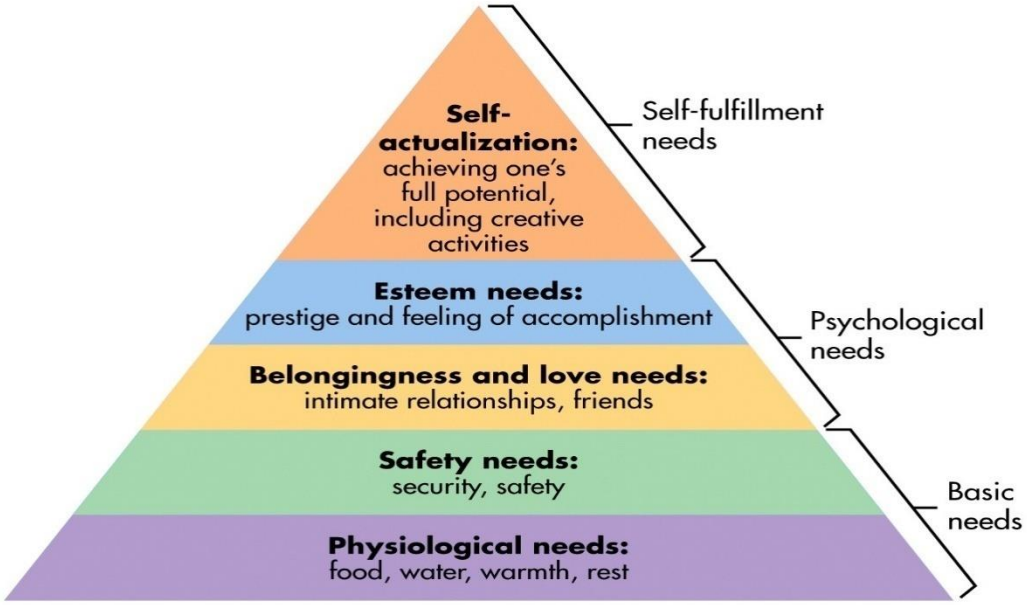
Picture 3: Memory Process



(Picture shows information moving from sensory memory → short-term memory → long-term memory)

a) Name the stages of memory shown.
b) Which stage has the longest storage capacity?
c) Suggest one way to improve memory retention.

Picture 4: Maslow's Hierarchy of Needs Pyramid



a) Name the theory shown in the picture.
b) Which need is at the top of the pyramid?
c) How does motivation influence behaviour?

Section F: Case-Based Questions

Case 1: Learning & Memory

Sonal forgets most of what she memorises a day before the exam. However, when she understands concepts and revises regularly, her performance improves.

a) Which type of learning is more effective here?
b) Name two reasons for forgetting.
c) Suggest two strategies to improve her memory.

Case 2: Motivation

Rahul wants to become a social worker. Despite financial difficulties, he studies sincerely because he wants to help society.

a) Identify the type of motivation involved.
b) Which level of Maslow's hierarchy does this reflect?
c) How does motivation affect goal-directed behaviour?

Section G: Long Answer Questions

(6 marks each)
1. Explain the major methods of enquiry in psychology.
2. Describe the process of learning and factors influencing it.
3. Explain motivation and discuss Maslow's theory of motivation.

POLITICAL SCIENCE

This winter holiday homework is designed to strengthen conceptual clarity, promote critical thinking, and encourage creativity. Students are expected to present their work neatly and originally.

Activities

1. Concept Diary: Choose any five key concepts from Political Theory (Liberty, Equality, Justice, Rights, Citizenship). Write their meaning, one real-life example, and one contemporary challenge related to each concept.

2. Indian Constitution Scrapbook: Prepare a mini-project on any three features of the Indian Constitution. Include articles, pictures, newspaper cuttings, and a short explanation in your own words.

3. Timeline Activity: Create a timeline highlighting major events in the making of the Indian Constitution (1934–1950) with brief descriptions.

4. Case Study Analysis: Read about any recent constitutional or political issue from newspapers. Write a short note explaining how constitutional values are involved.

5. Creative Expression: Write a poem, short story, or dialogue on the theme 'Why Democracy Matters in Today's World'.

6. Map Skill (Optional): On a political world map, locate and label five democratic and five non-democratic countries.

Submission Guidelines

• Homework must be handwritten unless stated otherwise.

• Originality and creativity will be rewarded.

• Use A4 size sheets and maintain proper presentation.

• Submit the work on the reopening day after winter holidays.

SOCIOLOGY

In this winter holiday enjoy with your friends while doing this group project.

- Prepare a ppt presentation on the topics given to each group
- You also have to give a class presentation once the school reopen.
- You may ask questions to other students of the class.
- After your presentation, class will be given chance to ask questions
- Topics are –

- Group 1 - Sociology and society
- Group 2 - Terms, concepts and their use in sociology
- Group 3 - Understanding social institutions
- Group 4 - Culture and socialisation
- Group 5 - Social change and social order in rural and urban society
- Group6 - Introducing western sociologists
- Group 7 - Indian Sociologists

Your presentation group will be intimated in school and also in subject WhatsApp group

ACCOUNTANCY

(CALCULATIONOFGROSSPROFIT,OPERATINGPROFITANDNETPROFIT)

(1) From the following information, calculate Gross Profit the year ended 31st March, 2021: AdjustedPurchases₹11,00,000;Sales₹12,50,000;FreightandCarriageInwards ₹6,000; Wages ₹14,000; Freight and Cartage Outwards ₹5,000; Closing Stock ₹1,00,000. (**Ans.** Gross Profit – ₹1,30,000, **Hint:** Adjusted Purchase = OpeningStock + Net Purchases - Closing Stock)

(2) Calculate Gross Profit When Total Purchases during the year are ₹8,00,000; Returns Outward ₹20,000; Direct Expenses ₹60,000 and 2/3rdof the goods are sold at ₹6,10,000. (**Ans.** ₹50,000)

(3) AscertainCostofGoodsSoldfromthefollowing:(**Ans.**₹78,600)

Indirect Expenses	₹15,200	DirectExpenses	₹18,600
Sales	₹1,20,000	NetPurchases	₹72,000
ReturnInwards	₹12,000	ReturnOutwards	₹8,000
OpeningInventory	₹16,000	ClosingInventory	₹28,000

(4) Opening Stock ₹30,000; Purchases ₹54,600; Expenses on Purchases ₹6,000;Sales₹90,000;ExpensesonSales₹3,000;ClosingStock₹36,600,RentReceived ₹15,000. Calculate Cost of Goods Sold, Gross Profit and Net Profit. (**Ans.** Cost of Goods Sold - ₹54,000; Gross Profit - ₹36,000, Net Profit - ₹51,000) 48,

(5) Opening Stock ₹15,000; Sales ₹48,000; Carriage Inwards ₹3,000; Sales Return ₹3,000; Gross Profit ₹18,000; Purchases ₹30,000; Purchases Return ₹2,700. CalculateClosingStockandCostofGoodsSold.(**Ans.**ClosingStock-₹18,300, Cost of Goods Sold - ₹27,000)

(6) From the following information, Calculate Gross Profit for the year ended 31st March, 2021:

CarriageInwards	₹1,000	Wages	₹2,000
FreightInwards	₹3,600	Purchases	₹2,80,000
OpeningStock	₹1,00,000	ClosingStock	₹80,000

GrossProfitonSalesis20%.(**Ans.**GrossProfit-₹76,650,**Hint:**Sales₹3,83,250)

(7) CalculateClosingStockfromthefollowingdetails:
ClosingStock₹20,000;CashSales₹60,000;CreditSales₹40,000;Purchases₹ 70,000;RateofGrossProfitonCostis33.3%.(**Ans.**₹90,000)

(8) CalculateNetSalesandGrossProfitfromthefollowinginformation:
CostofGoodsSold₹1,00,000;GrossProfit20%onSales.(**Ans.**NetSales-₹ 1,25,000,GrossProfit-₹25,000

(9) Net Sales for the year ended 31st March, 2021 is ₹9,00,000. If Gross Profit is 25% of Cost, find Gross Profit and Cost of Goods Sold. (**Ans.** Gross Profit - ₹1,80,000, Cost of Goods Sold - ₹7,20,000)

(10) CalculateOperatingProfit:

NetProfit₹1,00,000;RentReceived₹10,000;GainonSaleofMachine₹15,000; InterestonLoanPaid₹20,000,DonationGi₹en₹2,000.(**Ans.**₹97,000)

(FIANANCIALSTATEMENTSWITHADJUSTMENTS)

(1) From the following trial balance of Mr. A prepare trading and profit & Loss A/c for the year ending 31stMarch 2021 and a balance sheet as at that date:

Dr.Balances	**s**	**Cr.Balances**	**s**
Cash	10,000	Sales	1,96,200
OpeningStock	41,300	Returns	195
Wages	22,525	Loanat12%(on1-7-2020)	20,000
Purchases	1,30,295	Creditors	30,305
ReturnsInward	3.200	CashDiscount	530
Repairs	1.675	Capital	68,900
Baddebts	2,310		
Interestonloan	600		
Salaries	8,000		
Insurance	1,000		
Charity	125		

Rent	2,000		
Machinery	16,000		
Debtors(includingShyam fordishonoredbillof800)	30,000		
Patents	7,500		
Copyrights	18,600		
Goodwill	21,000		
	3,16,130		**3,16,130**

Adjustments:

(a) Wagesinclude2,000incurredforerectionofnewmachineryon1-4-2020;

(b) Stockon31st March,2021was40,925;

(b) Provide5%depreciationonmachineryandwriteoffpatents,copyrightsand goodwill by 33.3% each;

(c) Salariesunpaid800;

(d) HalftheamountofShyam'sbillisirrecoverable;

(e) Createaprovisionat5%onotherdebtors;

(f) Rentispaidupto31st July2021;

(h) Insuranceprepaid250.

(Ans.GrossProfit-42,000;Netprofits-7,110;Balancesheet-1,28,315)

(2) FromthefollowingtrialbalanceofDeviGarmentsasat31st March,2021,prepare trading and profit & Loss account and balance sheet:

Particulars	s	Particulars	s
Openingstock	60,000	Sales	6,20,000
Purchases	3,00,000	Interestearned	8,000
Cashinhand	35,000	Tradingcommission	25,000
Bankbalance	75,000	Cashdiscount	12,000
Sundrydebtors	2,20,000	Outstandingwages	10,000
Directexpenses	20,000	Provisionfordoubtfuldebts	20,000
Wages	50,000	Baddebtrecovered	5,000
Salaries	35,000	Capital	5,20,000
Investments	1,20,000	Sundrycreditors	1,80,000
Tradecharges	5,000		
Advertisement	60,000		
Generalexpenses	10,000		
Furniture (includingfurniturecosting 1,00,000purchasedon 01.01.21)	4,00,000		
PersonalexpensesofDevi	10,000		
	14,00,000		**14,00,000**

Adjustments:

Preparetradingandprofitandlossaccountfortheyearended31-March2021anda balancesheetasatthatdate,takingintoconsiderationtheadjustmentsgivenbelow:

(1) Anassetwassoldatitsbookvalueof20,000andcashwasusedbythe proprietor to purchase a computer for his personal use. However, 20,000 stood added to cash account.

(2) Purchasesincludeacomputercosting30,000purchasedon1st Nov'17.

(3) Anadvanceof40,000toasupplierwaswronglyincludedinsundrydebtors.

(4) Advertisementcostistobeallocatedoverfiveyears.

(5) Depreciate furnitureat10%p.a.;computerat20%p.a.

(6) Writeoffbaddebts10,000andcreateaprovisionof5%fordoubtfuldebts.

(7) Bankbalanceasperpassbookwas74,200.Thedifferencewasonaccountof bankchargesdebitedbythebank.

(8) Closing stock was valued at 1, 00,000 (realizable value 80,000). Goods costing 10,000 were destroyed by fire on 5thApr'18.

(Ans.GrossProfit-3,00,000;Netprofits-2,53,700;Balancesheet-9,33,700)

(3) Fromthefollowingtrialbalance,prepareatradingandprofit&lossA/cfortheyear ended 31stMarch, 2021 and a Balance Sheet as at that date:

Dr.Balances	**s**	**Cr.Balances**	**s**
Drawings Purchases	8,500	Capital Creditors	1,50,000
CarriagesInward	2,80,000	Outstanding Expenses	45,000
Wages	4,000	Rent Received	9,000
Power	30,000	Purchases Return Sales	2,000
Depreciation on machinery	11,000	Provision for bad debts	15,000
Advertisement Development	2,000	Discount Received	4,40,000
Plant and Machinery Goodwill	15,000		2,000
Agent'sSamples	70,000		3,500
Opening Stock	18,000		
Debtors	6,000		
Cash at Bank	35,000		
Cash in Hand	26,200		
Salaries	16,000		
General Expenses	22,800		
Prepaid Expenses	47,000		
Salary to Agent Rent	17,000		
and Insurance	900		
Discount Allowed	21,000		
Sales Return	23,000		
CommissiontoAgent	7,000		
	2,900		

	3,200		
	6,66,500		**6,66,500**

Adjustments:

(a) ClosingStockwasvaluedat50,000.Goodscosting5,000weredistributed among staff members free of cost;

(b) Depreciationagentssamplesby25%;

(c) Writeoffadvertisementdevelopmentby30%;

(d) Writeoff2,200asbaddebtsandcreateaprovisionfordoubtfuldebtsondebtors at 5%;

(e) Proprietorwithdrew1,000forhisprivateuse.Thisamountwasincludedin

general expenses;

(g) Charge5%manager'scommissiononnetprofitaftercharginghis commission;

(g) Thereis a contingent liabilityof20,000 inrespect ofacourt case.

(Ans.GrossProfit-1,47,200;Netprofits-20,000;Balancesheet-2,15,500)

BUSINESS STUDIES

(i). Assignment 1 and 2 Link : Do the assignments in your register.
https://drive.google.com/file/d/19bFFNBj3dUIrlQgV7zQ2iD8mUm4zDGs5/view?usp=drivesdk

(ii).MODEL (on any one topic):

1.Types of Business Organisations

– 3D models showing Sole Proprietorship, Partnership, Joint Stock Company, and Cooperative Society.

2.E-Business vs Traditional Business

– A comparative model or working setup demonstrating online vs offline business processes.

3.Supply Chain Management

– Flow diagram/model showing the journey of a product from manufacturer to customer

4. Digital Payment Systems in India

– Working model showing UPI, NEFT, RTGS, and digital wallets.

5.Social Responsibility of Business

–Case study highlighting corporate social responsibility (CSR) initiatives by at least 2 companies.

6.Banking Services & Procedures

– Model showing how to open a bank account, use of cheques, ATM, online banking, etc.

7.Insurance Services

– Display types of insurance (life, health, fire, marine) and their relevance to business.

8. International Trade

Case Studies of disputes in international trade between nations and role of WTO in resolving these issues. (any 4 disputes).

MATHEMATICS

Q1. How many 3-digit odd numbers can be made using the digits 5,6,7,8,9 when the digits can be repeated?

a)55 b)75 c)70 d)80

Q2. The equation of a line passing through (1,2) and perpendicular to x+y+7=0 is:-

a) y-x+1=0 b) y-x-1=0 c)y-x+2=0 d)y-x-2=0

Q3. Three persons enter in a bus where there are 5 vacant seats.In how many ways can they seat themselves?

a)120 b)10 c)240 d)60

Q4. The value of $\tan 105°$ is:-

a)$2+\sqrt{3}$ b)$2-\sqrt{3}$ c)$-2-\sqrt{3}$ d)$-2+\sqrt{3}$

Q5.The number of words which can be made from the letters of the word MONDAY assuming that no letter is repeated ,if 4 letters are used at a time is:-

a)630 b)6300 c)3600 d)360

Q6-The value of x for which the points (1,5) (x,1) and (4,11) are collinear is:-

a)1 b)-1 c) 3 d)-3

Q7. The area of a triangle whose vertices are (10,-6) ,(2,5) and (-1,3) is:-

a)$\frac{29}{2}$ sq units b)$\frac{39}{2}$ sq units c)$\frac{49}{2}$ sq units d)$\frac{11}{9}$ sq units

Q8. The sum of some terms of a G.P. is 315, whose first term and the common ratio are 5 and 2 respectively, then the value of last term is……

a)160 b)106 c)190 d)901

Q9.The distance of the point P(3,-5) from the line l whose equation is 3x-4y-26=0 is:

a)1/5 units b)11/5 units c) 9/5 units d) 3/5 units

Q10. The value of sin (-420°) (cos 390°) + cos (-660°) (sin 330°) is:-

a)-3 b)0 c)2 d)-1

Q11. The number of signals that can be made by 4 flags of different colours ,taking one or more at a time is:

a)48 b)52 c)64 d)56

Q12.The value of i^{-1097} is:-

a)-1 b) i c)- i d)1

Q13. A gentleman has 6 friends to invite. In how many ways can he send the invitation cards to them, if he has three servants to carry the cards?

a)216 b)126 c)612 d)621

Q14.Seven persons are to be seated in a row. The probability that two particular persons sit next to each other is:-

a)$\frac{1}{3}$ b)$\frac{1}{6}$ c)$\frac{2}{7}$ d)$\frac{1}{2}$

Q16.The value of $\cot(\frac{\pi}{4} + Q) \times \cot(\frac{\pi}{4} - Q)$ =--------

a)-1 b)0 c)1 d) notdefined

Q18.The value of $\csc(-1410^\circ)$ is:

a)$\frac{2}{\sqrt{3}}$ b)1 c)2 d)none

Q19.The distance between the points P(-3,7,2) and Q(2,4,-1) is:-

a)$\sqrt{23}$ units b)$\sqrt[2]{33}$ units c)$\sqrt{43}$ units d)$\sqrt{13}$ units

Q20. The value of k so that the line 2x+ky=9 may be parallel to 3x-4y+7=0 is:-

a)-3/8 b) -8/3 c)-4/3 d)3/4

Q21

Find the equation of line which passes through the point (3,4) and the sum of its intercepts on the axes is 14.

Q22. A pair of dice is rolled. Consider the following events: A : the sum is greater than 8, B : 2 occurs on either die, C : the sum is at least 7 and a multiple of 3. Which pair of events are mutually exclusive?

Q23 A card is drawn at random from a deck of 52 playing cards. Find the probability that it is: (i) an ace (ii) a jack of hearts (iii) a three of clubs or a six of diamonds (iv) a heart (v) any suit except heart (vi) a ten or a spade (vii) neither a four nor a club (viii) an honors card (ix) a face card (x) a spade or a face card

Q24. Four cards are drawn at random from a pack of 52 cards. Find the probability of getting: (i) all the four cards of the same suit (ii) all the four cards of the same number (iii) one card from each suit (iv) all four face cards (v) two red cards and two black cards (vi) all cards of the same color (vii) getting four aces

Q25. An urn contains 9 red, 7 white, and 4 black balls. If two balls are drawn at random, find the probability that: (i) both the balls are red (ii) one ball is white (iii) the balls are of the same color (iv) one is white and the other is red

Q 26 A five-digit number is formed by the digits 1, 2, 3, 4, 5 without repetition. Find the probability that the number is divisible by 4.

Q27. One number is chosen from numbers 1 to 200. Find the probability that it is divisible by 4 or 6.

Q 7. The letters of the word "SOCIETY" are placed at random in a row. What is the probability that three vowels come together?

Q28. Find the probability that in a random arrangement of the letters of the word "UNIVERSITY" the two I's come together.

Q29. The letters of the word "MUMMY" are placed at random in a row. What is the chance that letters at the extreme are both M?

PHYSICS

Holiday Homework – Physics (PPT Assignment)

Students are required to prepare short notes in the form of a PowerPoint Presentation (PPT) for the following chapters:

Thermal Properties of Matter

Kinetic Theory of Gases

Group Formation

Students must work in groups of two, starting from Roll No. 1.

Odd Roll Number → Thermal Properties of Matter

Even Roll Number → Kinetic Theory of Gases

Guidelines

PPT should include concise theory, important definitions, key formulae, and relevant diagrams/graphs.

Keep the content short, clear, and well-structured.

Equal participation of both group members is expected.

BIOLOGY

Biology Project: The Story of Digestion

Topic: Human Digestion and Absorption (NCERT Class 11 Chapter 16)

1. Project Title & Objective

Title:*The Epic Journey of a Morsel: A Biochemical and Mechanical Analysis of Digestion.*

Objective: To trace the path of a complex food meal (Carbohydrates, Proteins, and Fats) through the alimentary canal, highlighting the anatomical structures, enzymatic actions, and absorption mechanisms involved.

2. Project Structure

I. Introduction

- Definition of Digestion.
- Overview of the Alimentary Canal and Associated Glands.

II. The Journey: Step-by-Step

- **The Mouth:** Role of Salivary Amylase and the formation of the Bolus.
- **The Stomach:** The role of HCl, Pepsinogen, and Prorennin. Explain the conversion of bolus to Chyme.
- **The Small Intestine (The Hub):**
    - Action of Bile (Emulsification of fats).
    - Pancreatic juice action (Trypsin, Chymotrypsin, Lipases, Nucleases).
    - Intestinal juice (*Succus entericus*) completing the breakdown.
- **Absorption:** Explain the transport of Glucose, Amino acids (Active/Passive), and Fatty acids/Glycerol (Chylomicrons).

III. The Large Intestine

- Absorption of water and minerals.
- Formation and egestion of feces.

IV. Conclusion

- Summary of the energy efficiency of the human digestive system.

3. Creative Activity

- **The "Menu" Analysis:** Take a sample meal (e.g., a burger or dal-rice) and create a flowchart showing exactly where each ingredient (starch, protein, fiber) gets digested.

4. Evaluation Criteria

- **Scientific Accuracy:** Correct use of enzymatic names and physiological processes.

- **Clarity of Flow:** Logical progression from ingestion to egestion.
- **Visual Representation:** Use of diagrams or flowcharts to simplify complex biochemistry

Chemistry – Winter Holiday Homework

Students are required to complete the following Chemistry holiday homework during the winter vacation period. The work must be done neatly and submitted on the first day after the vacation.

1. NCERT Revision

Thoroughly revise the prescribed NCERT chapters covered so far. Students should focus on understanding important definitions, concepts, formulae, and solved examples.

2. Activity: Chemistry in Daily Life

Write about any five household items and explain the chemistry involved in each. For every item, mention the following details:

• Chemical name
• Use of the item
• Chemistry involved (brief explanation)

3. Practice: Nomenclature

Practice and write solutions for twenty new nomenclature questions, other than those already discussed in the classroom.