

**KENDRIYA VIDYALAYA GC CRPF BANTALAB, JAMMU**  
**WINTER VACATION HOMEWORK**  
**CLASS XI**

**HINDI**

1- एक वाक्य लिखिए- जो एक ही वाक्य में दो वाक्यों के अर्थ को व्यक्त करे।

2- एक वाक्य लिखिए, जिसमें दो वाक्यों के अर्थ को व्यक्त करे।

3- एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे –

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे। ( ) एक वाक्य लिखिए

4- एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे-

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे?

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे?

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे।

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे?

( ) एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे।

5- “एक वाक्य लिखिए” जो दो वाक्यों के अर्थ को व्यक्त करे।

6- एक वाक्य लिखिए जो दो वाक्यों के अर्थ को व्यक्त करे।

**ENGLISH**

1. From your reference books, practice as many as possible : passages for reading comprehension ( case based) & passages for note making & attempt one for each in your note books.

2. Write 10 sentences for each in your note books :

A. Tenses ( with fill ups)

B. Clauses ( with fill ups)

C. Transformation of sentences

D. Re ordering of sentences

3. Practice all the skills of writing given in your syllabus for PT 2 & attempt one for each in your note books.

4 . Revise thoroughly all the chapters from Hornbill & Snapshots & prepare for forthcoming examination.

5 . Practice by writing is most important... to improve your hand writing & to enhance your speed.

6. Practice the paper section wise, giving one hour to each sectionsection , ie :

A. Reading section

B. Grammae & Writing Skills

3.Literature

**IMPORTANT:**

1.Plz don't buy any separate note book for this, do this in continuation in the same note book.

All the best for your examination.

## **MATHS**

**1. Determine graphically the minimum value of the objective function  $z = - 50x + 20y$  subject to the constraints:**

$$2x - y \geq -5; 3x + y \geq 3; 2x - 3y \leq 12; x \geq 0, y \geq 0$$

**2. Solve the following linear programming problem graphically: maximise  $z = 5x + 3y$  subject to  $3x + 5y \leq 15$ ,  $5x + 2y \leq 10$ ,  $x \geq 0$ ,  $y \geq 0$ .**

3. Solve the linear programming problem graphically:

maximize  $z = 5x + 7y$  subject to the constraints

$$x + y \leq 4, 3x + 8y \leq 24, 10x + 7y \leq 35, x, y \geq 0.$$

4. A dietician has to develop a special diet using two foods P and Q. Each packet (containing 30g) of food P contains 12 units of calcium, 4 units of iron, 6 units of cholesterol and 6 units of vitamin A. Each packet of the same quantity of food Q contains 3 units of calcium, 20 units of iron, 4 units of cholesterol and 3 units of vitamin A. The diet requires at least 240 units of calcium, at least 460 units of iron and at most 300 units of cholesterol.

Based on the above information answer the following:

a) How many packets of each food should be used to minimize the amount of vit. A in the diet?

b) Find the minimum amount of vitamin A?

c) How many packets of each food should be used to maximize the amount of vit. A in the diet?

d) How many corner points of the feasible region?

5. Three cards are drawn with replacement from a well shuffled pack of cards. Find the probability that

- (i) the card drawn are king, queen and jack respectively.
- (ii) the cards are king, queen and jack.

6. Bag I contains 3 red and 4 black balls and bag II contains 4 red and 5 black balls. One ball is transferred from bag I to bag II and then one ball is drawn from bag II. The ball so drawn is found to be red. Find the probability the ball transferred is black.

7. Two dice are tossed. Find whether the following two events A and B are independent.

$A = \{(x, y) : x + y = 11\}$      $B = \{(x, y) : x \neq 5\}$  where  $(x, y)$  is a typical sample point.

8. Five cards are drawn one by one with replacement from a well shuffled pack of 52 cards.

Find the probability that:

- (i) all the five cards are diamond.
- (ii) only 3 cards are diamond.
- (iii) none is diamond.

9. Integrate :  $\int \frac{x}{(x^2-a^2)(x^2-b^2)} dx$ .

10. Assume that each born child is likely to be a boy or a girl. If a family has two children, what is the conditional probability that both are girls given that

- (i) at least one is a girl child
- (ii) younger child is a girl

11. Evaluate :  $\int \frac{\cos x}{\sin^2 x + 4 \sin x + 13} dx$

Or

Evaluate:  $\int_0^{\pi} \sin^4 x \cos^3 x dx$

12. Find the particular solution of the differential equation  $\frac{dy}{dx} = 1 + x^2 + y^2 + x^2 y^2$ , given that  $y=1$  when  $x=0$ .

Or

Solve the differential equation :  $(x^2 - 1) \frac{dy}{dx} + 2xy = \frac{2}{x^2-1}$

13. Solve the linear programming problem graphically, maximize  $Z = 2x + 5y$ , subject to the constraints

$$2x + 4y \leq 8, 3x + y \leq 6, x + y \leq 4, x \geq 0, y \geq 0.$$

or

Solve the following L.P.P. graphically: Maximize  $z: 8000x + 12000y$ ,

Subject to the constraints:  $3x + 4y \leq 60, x + 3y \leq 30, x \geq 0, y \geq 0$

14. if  $y = (\sin^{-1} x)^2$  then prove that  $(1 - x^2) \frac{d^2y}{dx^2} - x \frac{dy}{dx} - 2 = 0$

15. Find the area of the smaller part of the circle  $x^2 + y^2 = a^2$  cut off by the line  $\frac{a}{\sqrt{2}}$ .

16. let A is the set of all positive integers and R is a relation on  $A \times A$ , defined by

$R = \{(a,b)R(c,d) : ad = bc, \text{ for all } (a,b), (c,d) \in A \times A.\}$  Show that the relation R is an equivalence relation.

Or

Check whether the function  $f : Q - \{3\} \rightarrow Q$  defined as  $f(x) = \frac{2x+3}{x-3}$  is one-one and onto function or not.

17. Find the distance between the lines  $\vec{r} = 4\hat{i} - \hat{j} + 2\hat{k} + \lambda(\hat{i} + 2\hat{j} - 3\hat{k})$  and

$$\vec{r} = 2\hat{i} + \hat{j} - \hat{k} + \mu(3\hat{i} + 2\hat{j} - 4\hat{k})$$

Or

Find the equation of a line passing through  $(2,-1,3)$  and perpendicular to the lines

$\vec{r} = \hat{i} + \hat{j} - \hat{k} + \lambda(2\hat{i} - 2\hat{j} + \hat{k})$  and  $\vec{r} = 2\hat{i} - \hat{j} - 3\hat{k} + \mu(\hat{i} + 2\hat{j} + 2\hat{k})$ . Obtain the equation in cartesian form.

18. If  $A = \begin{bmatrix} 1 & 0 & -2 \\ -2 & -1 & 2 \\ 3 & 4 & 1 \end{bmatrix}$  show that the matrix is a non-singular matrix and

Hence find  $A^{-1}$ .

**19. Case Study-1 : Read the text carefully and answer the following questions :**

For the function  $f(x) = \frac{4\sin x - 2x - x\cos x}{2 + \cos x}$ ,  $0 \leq x \leq 2\pi$  answer the following questions:

- Find  $f'(x)$
- Find the interval in which  $f(x)$  is increasing.
- Find the interval in which the function  $f(x)$  is decreasing

**20. Case study -II:** two motorcycles A and B are running at the speed more than allowed speed on the road along the lines

$\vec{r} = \lambda(\hat{i} + 2\hat{j} - \hat{k})$  and  $\vec{r} = 3\hat{i} + 3\hat{j} + \mu(2\hat{i} + \hat{j} + \hat{k})$  respectively.

Based on this information answer the following questions :

- Find the cartesian equation the line along which bike A is running.
- Find the direction cosine of the line along which Bike A is running.
- Find the shortest distance between the two lines.

**21. Case Study -III:** Read the text carefully and answer the following questions:

Rahul is studying in class 12<sup>th</sup>. She wants to do graduation in chemical engineering. Her main subjects are mathematics, physics and chemistry. In the examination, her probability of getting grade A in these subjects are 0.2, 0.3 and 0.5 respectively.

- Find the probability that she gets grade A in all subjects.
- Find the probability that she gets grade A in no subjects.

**CHEMISTRY**

- 1) Complete the practical files.
- 2) Revise following chapters for PT 2
  - 1) Equilibrium
  - 2) Redox reactions
  - 3) Some basic principles and techniques in Organic Chemistry
- 4) Solve and practice the intext examples of the above chapters in classwork notebook.
- 5) Prepare the curriculum for Viva roll no. wise as informed.

### **PHYSICS**

- 1) Complete your notebooks (Mechanical properties of Fluids, Thermal properties OF MATTER ,Thermodynamics, and kinetics theory of gases )in all aspects and practical file 5 practical and 3 activities.
- 2) Revise following chapters for PT 2
  - 1) Mechanical properties of fluids
  - 2) Thermal properties of matter
  - 3) Thermodynamics
  - 4) Kinetic theory of gases
- 3) Complete your investigatory project
- 4) Solve the worksheets based on the chapters send in WhatSapp group.

### **BIOLOGY**

1. . Complete all practicals in file.
2. Revise PT 2 syllabus.
3. Make a investigatory project of the topic assigned in the class . Submit printed copy that includes
  - a. Certificate
  - b. Acknowledgement
  - c. Project details
  - d. PPT
4. Solve 20 Mcq's 20 Reasoning assertion questions from the chapters coming in PT 2 .
5. Complete your NOTE-BOOK with all NCERT SOLUTIONS AND DIAGRAMS.

### **COMPUTER SCIENCE**

1. Complete all practicals in file.
2. Revise List, Tuple, Dictionary & Modules for PT 2
3. Make a menu driven project using topics studied in XI. Submit printed copy that includes
  - a. Certificate
  - b. Acknowledgement
  - c. Project details
  - d. Code
  - e. Output screenshots for all menu items

## **INFORMATICS PRACTICES**

### SECTION A

1. Identify Input Device from the following
  - a. RAM
  - b. Monitor
  - c. Light pen
  - d. speaker
2. Which of the following is hardware?
  - a. RAM Chip
  - b. Windows OS
  - c. Compiler
  - d. keyboard
3. \_\_\_\_\_ works as an interface between Computer and the Hardware
4. Any device/part which is tangible ( easily seen, felt, or noticed) is called \_\_\_\_\_
5. \_\_\_\_\_ converts source code into object code
6. An Example of volatile memory is \_\_\_\_\_
7. Nonvolatile means \_\_\_\_\_
8. Android is an example of \_\_\_\_\_
9. The main three parts of Mobile CPU are \_\_\_\_\_,  
ApplicationProcessing Unit and Graphics processing Unit.

10. In mobile System , SoC stands for \_\_\_\_\_

### SECTION B

1. Which of the following is a valid identifier:  
i. 1sum    ii. \_sum    iii. total marks    iv. f l o a t
2. Which of the following is not a relational operator:  
i. >    ii. <=    iii. =    iv. ==
3. Identify the membership operator from the following:  
i. in    ii. not in    iii. both i & ii    iv. None
4. Which one is not an arithmetic operator:  
i. //    ii. \*\*    iii. <    iv. All are arithmetic operators
5. What will be the correct output of the statement :  
>>> 7//5.0  
i. 1.4    ii. 1.0    iii 2    iv. None of the above
6. What will be the correct output of the statement :  
>>> 5+2\*\*3\*2+5  
i. 28    ii. 20    iii. 26    iv. None of the above
7. Give the output of the following code:  
>>> 2\*\*2\*\*3  
i. 81    ii. 256    iii. 12    iv. 88
8. Give the output of the following code:  
>>>7\*(8/(5//2))  
i. 28    ii. 28.0    iii. 20    iv. 60
9. Single line comments in python begin with... symbol.  
i. #    ii. "    iii. %    iv. <<
10. The input() function always returns a value of \_\_\_\_\_ type.  
i. Integer    ii. float    iii. string    iv. Complex
11. \_\_\_\_\_ function is used to determine the data type of a variable.  
i. type()    ii. id()    iii. print()    iv. str()
12. The smallest individual unit in a program is known as a.....  
i. Token    ii. keyword    iii. punctuator    iv. Identifier



13. If a=12 and b=12 then **id(a)** and **id(b)** will give  
 \_(same/different) address
- 14 String is an example of \_\_\_\_\_(immutable / mutable data type)

### SECTION C

- 1 Identify the datatype of the following  
 a. False            b. "true"            c. 34            d. 45.0
- 2 Identify the data type of R in every case ..  
 R=[2,3,4]            b. R= (23,12,34,56)    c. R=23/4            d. R=23//4
- 3 Identify System Software(s) from the following  
 a. UNIX            b. Paint Brush            c. Windows            d. DOS
4. In Python IDLE we can work in two modes \_\_\_\_\_&  
 \_\_\_\_\_

### SECTION D

1. Write a program to calculate Simple Interest. required values must be taken from user
2. Write a program to read 5 float values and calculate their sum and average
3. Write a program to read population of 3 countries and find Which country is having largest population
4. Find out the error(s) in the following code segment. Underline the error part and write the correct code in front of the incorrect code

```
a=input("Enter age of a
person")if a>21 then
    print("person is an Adult")
else
print("person is not an Adult")
```

5. Find out the output

```
print(" Python is an \n Interactive and easy language",sep='*',end='***)
print("It is portable", " Highly readable langauge", sep='&',end='***)
```

6. Find out the output  
M=[2,4,6,8,12,16,20]print("List is  
",M) M[2]=9  
M[-3]=22

```
print("Now List is ", M)
```

## SECTION E

### CASE STUDY BASED QUESTIONS

1. Priyanka is wants to type a NOTICE for school on computer but she is confused about few things. Help her by giving answers of the following :
  - a. Which Software should be used for this purpose
  - b. The software used to type NOTICE comes under which category of Software
  - c. Where to Save NOTICE ? The storage device which will be used to store this NOTICE, comes under Primary Storage or Secondary Storage?
2. Rohit wants to check **address** and **type** of Objects (variables) in python but he does not know how to do this. Help him by suggesting proper python command
3. Raksha has made program to add two numbers. Though program is not showing any error but she is not getting desired output. Help her to find out actual problem

```
N1=input("Enter any number")  
N2=input("Enter another number")  
R=N1+N2  
print("Sum of ",N1,"and",N2,"is".R)
```

## ACCOUNTANCY

1. **Revise chapter**  
**Rectification of errors**  
**Do question no:- 5, 8, 10, 14, 15, 24**  
**Trial balance**  
**Solve Q. No. 6, 10, 12, 13**  
**Financial statements II**  
**Solve Q. No. 11, 13, 15 and 27**  
**Also write the answer of following question**

**Q1: What is grouping and marshalling of assets and liabilities in balance sheet?**

**Q2: Give. 5 example of each: Capital, revenue expenditure**

## **BUSINESS STUDIES**

1. Revise chapter  
Sources of finance  
Small business and  
Internal Trade for PT II Exam

Write the answer of following question:

- Q1: How are Retained earnings a cheaper source of Finance to the organization?**
- Q2: Differentiate between shares and debenture.**
- Q3: Explain the the characteristics of Entrepreneurship development.**
- Q4: Describe the role of Small business in the development of economy.**
- Q5: Differentiate between Chain stores and department stores.**

## **ECONOMICS**

1. Exercise Questions for following chapters to be solved:
  - i. Cost and Revenue concepts
  - ii. Producer's Equilibrium
  - iii. Forms of market
  - iv. Coefficient of Correlation
2. Text book question and answers to be learn the write of above Chapter