

**JAIN BHARATI MRIGAVATI VIDYALAYA**

**SESSION 2024-25**

**SUMMER VACCATIONS HOMEWORK**

**CLASS XI**

**1. ENGLISH**

Q1. Do 5 integrated grammar exercises comprising fill ups, errors/omissions and jumbled words .

Q2. Design a poster on following :

- a) Woman Empowerment
- b) Say no to drugs
- c) My vision of India @2047
- d) India - a paradise for tourists

Q3. Do 5 comprehension exercises .

Q4. Make an analytical, research based project on any one of the following topics:

- a) Old age homes
- b) Child labour
- c) Environmental Awareness:the need of the hour
- d) Generation Gap

or any topic based on the chapters in your textbooks

The project should be handwritten , include 15-20 sheets of paper with use of coloured pens and pictures . Projects must include sections like an index, certificate of completion, acknowledgements, objectives, content about the assigned text, and a bibliography.

**2. MATHEMATICS**

**DO YOUR HOLIDAY HOMEWORK ON A4 SIZE SHEETS.**

Choose the correct option:

1. For any set A,  $(A')$  is equal to  
(a)  $A'$                       (b) A                      (c)  $\emptyset$                       (d) none of these
2. Let  $S = \{x: x \text{ is a positive MULTIPLE of 3 less than } 100\}$ ,  
 $P = \{x: x \text{ is a natural number less than } 20\}$ . Then  $n(S) + n(P)$  is  
(a) 34                      (b) 31                      (c) 33                      (d) 41

3. Write the following in set builder form. A

$$= \{3, 9, 27, 81\}$$

4. If the universal set  $U = \{1, 3, 5, 7, 9, 11, 13, 15, 17\}$ ,  
 $B = \{1, 3, 7, 13, 15\}$  then find  $B'$

5. Let A, B, and C be the sets such that  $A \cup B = A \cup C$  and  $A \cap B = A \cap C$ .  
Then show that  $B=C$ .

6. In a survey of 400 students in a school, 100 were listed as taking apple juice.

150 as taking orange juice and 75 were listed as taking both apple as well as

orange juice. Find how many students were taking neither apple juice nor

orange juice.

7. For all sets A and B,  $A - (A \cap B)$  is equal to\_\_\_\_\_.

8. If  $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ ,  $A = \{1, 2, 3, 5\}$ ,  $C = \{2, 3, 4, 8\}$ , then  $(C - A)'$  is \_\_\_\_\_.

9. Write the following sets in the roster form.

$$N = \{x: x^4 - 5x^2 + 6 = 0, x \in \mathbb{R}\}$$

10. Write the following sets in the roster form.

(i)  $A = \{x \mid x \text{ is a positive integer less than } 10 \text{ and } 2^x - 1 \text{ is an odd number}\}$

$$(ii) C = \{x : x^2 + 7x - 8 = 0, x \in \mathbb{R}\}$$

11 Let  $X = \{1, 2, 3, 4, 5, 6\}$ . If n represent any member of X, express the following as

sets:

$$(i) n \in X \text{ but } 2n \notin X$$

$$(ii) n + 5 = 8$$

(iii) n is greater than 4

12. Let  $U = \{1, 2, 3, 4, 5, 6\}$ ,  $A = \{2, 3\}$  and  $B = \{3, 4, 5\}$ .

Find  $A'$ ,  $B'$ ,  $A' \cap B'$ ,  $A \cup B$  and hence show that  $(A \cup B)' = A' \cap B'$ .

### 3.APPLIED MATHEMATICS

**NOTE- DO ALL THE SUMS.**

1. Solve for x:  $5^{3-2x} = 1$
2. Find the mean of the (positive) factors of 50.
3. Convert to the decimal number:  $(1100110011)_2$ .
4. Convert to the binary number:  $(1018)_{10}$
5. If  $2^x = 3^y = 12^z$ , prove that  $x = \frac{2yz}{y-z}$
6. In a certain language, PAC is coded as 61, how will NEP be coded?
7. If 3 women or 5 girls take 17 days to complete a piece of work, how long will 7 women and 11 girls working together take to complete the work?
8. A sheet is 11 cm long and 2 cm wide. Circular pieces 0.5 in diameter are cut from it to prepare discs. Calculate the number of discs that can be prepared.
9. Taps A and B can fill a tank in 6 and 8 hours respectively and tap C (at the bottom) can empty it in 12 hours. If all the three taps are opened together when the tank is empty, find after how many hours the tank will be full.
10. In a certain language, INDIA is coded as KMFHC, how will AMERICA be coded?
11. A woman introduces a man as the son of the brother of her mother. How is that man related to the woman?
12. A man accepts a position with an initial salary ₹ 5200 per month. It is understood that he will receive an automatic increase of ₹ 320 in the very next month and each month thereafter. Find his salary for the tenth month. What is his total earnings during the first year?

#### 4. CHEMISTRY

1. Prepare a Synopsis for CHEMISTRY INVESTIGATORY PROJECT.
2. Prepare a GLOSSARY OF CHEMISTRY. Add relevant pictures, diagrams and related to these discoveries. Glossary must comprise of 10 Chemistry terms (with their definitions) of each alphabet including Laws, formulas, principles and microscale chemistry apparatus.
3. Complete the assignment questions of Chapter – 1

#### CHAPTER – 1 : SOME BASIC CONCEPTS OF CHEMISTRY

1. How many moles of NaOH are contained in 27 ml of 0.15 M?
2. Calculate the number of atoms in each of the following:
  - a) 52 moles of He
  - b) 52 u of He
3. If ten volumes of dihydrogen gas reacts with five volumes of dioxygen gas, how many volumes of water vapour could be produced?
4. Calculate molarity of NaOH in the solution prepared by dissolving its 4g in enough water to form 250mL of the solution.
5. The density of 2 molal solution of NaOH is 1.10 g /ml. Calculate molarity of the solution.
6. How many atoms and molecules of phosphorus are present in 124g of phosphorous (P<sub>4</sub>)?
7. Calculate molality, Molarity and mole fraction of KI if the density of 20% aqueous KI solution is 1.202 g/ml.
8. What volume of O<sub>2</sub> at N.T.P is needed to cause the complete combustion of 200 ml of acetylene? Also calculate the volume of CO<sub>2</sub> formed.

#### 4. PHYSICS

1. If the units of energy, force and velocity are 50 J, 5 N and 2m/ s, what will be unit of mass, length and time?
2. The units of power, force and time are 1 kW, 1kN and 1 milli second. Find the unit of mass and length.
3. What will be the value of G in CGS units if in SI units it is  $6.67 \times 10^{-11} \text{m}^3 \text{kg}^{-1} \text{s}^{-2}$ .
4. What will be the dimensions of a/b in the relation  $E = b \cdot x^2 / at$ , where E is energy, x is distance and t is time.

5. In the relation  $h = \frac{2T \cos \alpha}{r \rho g}$ , where  $h$  is the height,  $T$  is surface tension  $\rho$  is density and  $r$  is the radius of a capillary tube,  $\alpha$  is angle of contact and  $g$  is acceleration due to gravity. Verify the correctness of the equation.
6. Give one example each of physical quantities which have SI unit but no dimensions, which neither have unit nor dimension.
7. Acceleration due to gravity is  $10 \text{ m/s}^2$ . Determine its value in  $\text{cm/minutes}^2$ .
8. If the units of force and length, each are doubled then how many times the unit of energy, Surface tension and stress be affected?
9. If velocity, density and frequency are taken as fundamental quantities, what will be the dimensions of linear momentum and surface tension?
10. If velocity, acceleration and force are chosen as fundamental units, what will be the dimensions of linear momentum, angular momentum and Young's modulus of elasticity?
11. A man walks on a straight road from his home to a market  $2.5 \text{ km}$  away with speed of  $5 \text{ km/h}$ . Finding the market closed, he instantly turns and walks back home with a speed of  $7.5 \text{ km/h}$ . What is the (a) magnitude of average velocity, and (b) average speed of the man over the interval of time (i)  $0$  to  $30 \text{ min}$ , (ii)  $0$  to  $50 \text{ min}$ , (iii)  $0$  to  $40 \text{ min}$ ?
12. A car moving along a straight highway with speed of  $126 \text{ km/h}$  is brought to a stop within a distance of  $200 \text{ m}$ . Find the retardation of the car (assumed uniform), and how long does it take for the car to stop?
13. Two balls are thrown simultaneously, 'A' vertically upwards with a speed of  $20 \text{ m/s}$  from the ground and 'B' vertically downwards from a height of  $40 \text{ m}$  with the same speed and along the same line of motion. At what points do the two balls collide?
14. Select an investigatory project on one of the topic given in Physics Laboratory Manual for class xi and must inform me so that there should not be any repetition.

## 5. BIOLOGY

1. Prepare an investigatory project on any one of the following topics
  - Respiratory and cardiac disorders
  - Diabetes and its prevention
  - Public health and hygiene
  - Drug addiction and drug abuse
  - Obesity and health risk
  - Nutritional aids
  - Air pollution and its effects
  - Antibiotic resistance

- Coffee addiction
- Different sleeping patterns
- Waste management

The project must include: • Cover page • Index • Acknowledgement • Certificate • Introduction • Details about the project • Annexure • Bibliography

2. Explore the relationship between biology and human health by researching a specific disease or medical condition. Describe the causes, symptoms, diagnosis, and treatment options for the chosen condition. Discuss preventive measures and lifestyle choices that can help reduce the risk of developing the disease or managing its symptoms effectively.
3. Prepare a power point presentation on the topic 'Exploring Future Career Paths in Biology,' highlighting the broad scope of biology. This expansive field encompasses a wide range of organisms, from large plants and animals to tiny microorganisms, offering diverse career opportunities. The objective is to depict the diverse pathways available in healthcare, environmental science, technology, and other fields within biology.
4. Embark on an exciting journey towards shaping the future of life sciences by creating a mind map or flowchart that illustrates the strategies and steps necessary to pursue your career goals in biology.

## **7.PSYCHOLOGY**

### **1. ART INTEGRATION PROJECT IN PSYCHOLOGY**

Topic –Human development

#### **I-DISCOVER PROJECT**

Change is often said, to be the only constant. This is certainly true for human beings. Think about the many ways in which you have changed over the course of your life. Some of these changes are very obvious and others are less apparent. To study all these changes, collect your photographs from infancy to adolescence. Interview your parents/guardians regarding your behavior. Physical development (like when you started walking), language development (like when you spoke your first words), social development (like how and when you made friends), emotional development (how you expressed and controlled your emotions), cognitive

development (when you started reasoning out). Write your personal views about these stages of life, you can write specific events, experiences or even verbatim or whatever your parents share with you. After adolescence stage collect pictures of others (for example parents or any other pictures) and interview them regarding the kind of changes they have gone through and kind of challenges they face in everyday life.

#### ART INTEGRATION : SUGGESTED ACTIVITIES FOR THE PROJECT.

- Collage and mosaic work with a variety of coloured papers and coloured printed pictures/photographs .
  - Creative use of colors to show space, atmosphere, subjective moods
  - Objects of day to day use in groups and in different settings and arrangements
2. Choose an interesting person (eminent Psychologist). Write a paper about him considering following element:
    - a) Biography
    - b) Professional History
    - c) Theories/ Influence on psychology
  3. Do the following questions in Psychology notebook after reading chapter -1
    - a.The first psychological laboratory was established by \_\_\_\_\_.
    - b.The school of Structuralism was established by \_\_\_\_\_.
    - c.The behaviourist school of psychology was founded by\_\_\_\_\_.
    - d.The term \_\_\_\_\_ describes the key idea of psychoanalysis.
    - e.Define cognition.
    - f.What is introspective method?
    - g.Make figure 1.1 (ncert) on psychology and other disciplines. Research on each discipline and write a short note on each.
    - h.What is behavior - Give good examples of overt and covert behavior observed by you during the vacations?
    - i.What is Psychology?
    - j.\_\_\_\_\_ developed Psychoanalysis.
  4. Make a model of Human Brain. Mention the various important parts and write their function.
  5. Read about any famous experiment in Psychology and write about it in your own words.

## 8.COMPUTER SCIENCE

1. Online Python courses from the websites already suggested and discussed in class.
2. Explore the basic configuration of a Personal Computer System required for an Computer Science Student.
3. Make a word document citing the difference between Mobile Computing and Personal computing.
4. Study about Basic Logic Gates and Their Truth tables also.
5. Do try these programs:
6. Write a program to find out whether a given year is leap year.
7. Write a program to find out whether a number is odd or even.
8. Write a program to calculate simple interest using formula  $SI = P * R * T / 100$ . Rate will be 5% if the principal amount is less than 25000 otherwise rate will be 8 %
9. Write a program to find the area and perimeter of rectangle.
10. Write a program to swap two numbers without using third variable.

### **9. INFORMATICS PRACTICES**

1. Do basic python course from <https://www.mygreatlearning.com/> for basic learning of Python Language.
2. Explore the basic configuration of a Personal Computer System required for an Informatics Student.
3. Make a word document citing the difference between GPU and CPU.
4. Do try these programs:
  - a. Write a program to find out whether a given year is leap year.
  - b. Write a program to find out whether a number is odd or even.
  - c. Write a program to calculate simple interest using formula  $SI = P * R * T / 100$ . Rate will be 5% if the principal amount is less than 25000 otherwise rate will be 8 %
  - d. Write a program to find the area and perimeter of rectangle.
  - e. Write a program to swap two numbers without using third variable.

### **10. BUSINESS STUDIES**

Q1. Compare Business with Profession and Employment.



- Q2. Comparative evaluation of forms of business organisation.
- Q3. Compare the status of minor in a joint Hindu family business with that of in a partnership firm.
- Q4. All the members of a company sitting in a general meeting were killed by bomb. Was the company wound up?
- Q5. According to the partnership act 1932 it is not compulsory for a partnership firm to get itself registered ,then why do partner prefer to get the firm registered?
- Q6. Who is working as an active partner and what is the nature of his liabilities?
- Q7. Draw a flow chart on Business Activities.
- Q8. Explain the characteristics of Business.
- Q9. Collect some facts about Reliance industry limited and paste in your notebook.
- Q10. Collect different types of Bank account and paste their forms.
- Q11. Make a project file on any one of the following
- a. Visit of an industry
  - b. Multinational company
  - c. Banking and finance
  - d. Insurance
  - e. Transportation
  - f. Advertisement
  - g. One Person Company.

## **11.ACCOUNTANCY**

- Q1. Write a short note on types of Assets with one example of each.
- Q2. Firm has received large order to supply goods .Will it be recorded in the books of account of the firm ? Give reason.
- Q3. Capital is a liability for the business. Explain this statement with the principle applied.
- Q4 “Only financial transactions are recorded in accounting “.Explain the statement.
- Q5. If the capital of a businesses 300000 liabilities are 50000,loss Rs70000, calculate the total assets of the business.

Q6. X Started a business on 1st April with the capital Rs 50000 and a loan of Rs25000 taken from Y. During 2023-24, he had introduced additional capital of Rs25000 and had withdrawn Rs15000 for personal use. On 31st March 2024 his assets were Rs150000. Find his capital as on 31st March 2024 and profit made or loss incurred during the year 2023-24.

Q7 Indicate how accounting equation is affected if cash is received against service rendered

Q8. If the capital is 100,000 and outside liabilities are 2,50,000 .find the total assets.

## **12.POLITICAL SCIENCE**

1. Lok Sabha elections-2024 were conducted in the country recently. Collect the newspaper clippings and compile a detailed report including the National Political parties, their main leaders and the party manifesto. Do the result analysis of the election. Find out if any unfair means are used in your constituency.

2. Make a project file on any one topic from your syllabus .Include the following pages: acknowledgement, certificate, content, bibliography and Teacher's remarks.

3. Make mind maps related to your project topic as art-integrated activity

Read and revise the topics done so far.

Kindly note – Point 1 to be done in Political Science notebook.

## **13.ECONOMICS**

1. Prepare one economics project of your choice (suggestive list of projects discussed in the class). Add the following points: -

- a) Relevance of the topic
- b) Knowledge content
- c) Research work
- d) Presentation technique
- e) Case study
- f) Questionnaire

2. Prepare one art integrated activity of following lessons

- a) Production possibility curve
- b) Theory of demand

3. Read and learn all chapters of micro economics done in the class
4. Read newspaper on daily basis and paste five economics current news in economics register.
5. Prepare a mind map of all lessons in micro economics done in the class and list of formulas in statistics.
6. Prepare any one game on economics

## **14.HISTORY**

(A) You are required to write a classical Historical movie (Hollywood & Bollywood) review (minimum of five paragraphs).

Include the following elements in your movie review:

1. In the opening paragraph state the title, and briefly summarize the plot and Historicity of the movie. Describe how you truly feel about the film. What is your honest reaction to the film? Did you like/dislike it? Was it confusing? Exciting? Suspenseful? Boring?
2. In the next three paragraphs analyze the literary, dramatic, and cinematic aspects of the film. Please use examples from the movie to support your analysis.

(B) Historical Landmark Project All over India , especially Delhi or New Delhi there are places set aside to remember people and events that have helped to shape our history . Those places are known as National Historic Landmarks. You are going to :-

- (1) choose one of those landmarks,
- (2) Do research
- (3) prepare report
- (4) construct an exhibit of it, with materials available at home,
- (5) present your exhibit and research findings in the class.

(C) Historical book Review

- (1) What is History? By E.H. Carr

(2) The nature of History By Arthur Marwick

(D) Watch following movies in your free time

-Troy

-Mongol: The Rise of Genghis Khan 2007

-Downfall

-Three Musketeers

-Apocalypso

### 15.HINDI

**प्रश्न-1. निम्नलिखित विषयों में से किसी एक विषय पर लगभग 1500 शब्दों में एक परियोजना कार्य तैयार कीजिए।**

**क. कबीर के धार्मिक विचारों\* पर प्रकाश डालते हुए उनके व्यक्तित्व और कृतित्व पर एक आकर्षक चित्रात्मक परियोजना तैयार कीजिए।**

**ख. नई पीढ़ी के द्वारा न अपनाए जाने वाले पांच पारंपरिक और पैतृक व्यवसाय की समस्या और समाधान पर चित्रात्मक परियोजना कार्य तैयार कीजिए।**

**ग. जन संचार के विभिन्न माध्यम पर चित्रात्मक परियोजना कार्य परियोजना का.....**

**पहला पृष्ठ-**

**विद्यार्थी का नाम, कक्षा , अनुक्रमांक**

**विद्यालय का नाम**

**दूसरा पृष्ठ- आभार ज्ञापन**

**तीसरा पृष्ठ- उद्देश्य**

**चौथा पृष्ठ- रूपरेखा**

**पाँचवा पृष्ठ - संपूर्ण चित्राकर्षक परियोजना**

**अंतिम पृष्ठ- संदर्भ- ग्रंथ**

**प्रश्न-2.प्रतिदिन हिंदी समाचार पत्र का संपादकीय पृष्ठ पढ़ें तथा समसामयिक लेखों का संकलन करें।**

## **16.PHYSICAL EDUCATION**

### **1. FITNESS KA DOSE ADHA GANTA ROJ**

(Do fitness exercise for your physical efficiency and for being physically fit.)

### **2. PROJECT WORK:**

Prepare a file with details of IPL

### **3. SAI KHELO INDIA FITNESS TEST: (Purpose, Equipment usage & Procedure)**

1. BMI
2. 50mt. Speed Test
3. 600mt. Run/Walk
4. Sit and Reach Test
5. Partial Curl Test
6. Push-ups & Modified push-ups
7. Plate Tapping Test
8. Flamingo Balance Test

Do Question No. 2 & 3 in Spiral notebook or file.

Calculate your BMI and write in which category you belong.

## **17. ARTIFICIAL INTELLIGENCE**

- 1) How an intelligent machine is able to find solutions to problems and to act rationally? Explain the concept in detail.
- 2) What is Chabot? Also explain the types of catboats.
- 3) What do you understand by the term supervised and unsupervised machine learning?
- 4) Explain the concept of artificial neural network and deep learning.
- 5) What are the applications of artificial intelligence in sustainable development?
- 6) Differentiate classification, regression and clustering.

Crate a AI project based on computer vision to recognize or process any image

## **18.PAINTING**

PROJECT 1: SKETCHING

Instructions: MAKE 5 STILL LIFE WATER COLOUR COMPOSITION  
USEING VARIOUS TECHNIQUES. ( SHEET SIZE A3 ).

PROJECT 2: PAINTING

Instructions: MAKE 2 PAINTINGS IN MIXED MEDIA. ( SHEET SIZE A3 )