



# HERITAGE CHILDREN ACADEMY

(Senior Secondary School Affiliated to CBSE, New Delhi)

NH-24, Jalif Nagla, Teh- Milak, Distt. Rampur (U.P) 244701

**SESSION : 2026-27**

## Summer Holiday Homework



**CLASS: XII**

[www.heritagemilak.com](http://www.heritagemilak.com)

Dear Students,

Holidays are the most anticipated time of the year for everyone. I hope you enjoy it a lot next to your family and when you come back you will tell us your best experiences. Beat the heat by drinking lemonade, coconut water and eating Fresh fruits. We wish you a very happy and a fruitful family time during this summer vacation. The school is closed for summer vacation from **1<sup>st</sup> June to 24<sup>th</sup> June, 2026 for Class X & XII.**

**GENERAL INSTRUCTIONS FOR ASSIGNMENT-**

- It is summer vacation time, a time to relax as well as to get fruitfully occupied in various scholastic and co-scholastic areas. Keeping this in mind, we have designed interesting Projects/Assignments to be completed during the summer vacation. This would encourage in-depth learning, strengthen concepts and prepare ground for improved academic output.
- It will not only enable you to recapitulate what was taught but will also help you to connect yourselves to the various learning processes. These projects will be assessed as Subject Enrichment Activity for Term I.
- Dear parents, kindly motivate and lend support to your children and ensure that they complete the given work well in time and to the best of their ability. Your encouragement can actually make a huge difference to the ultimate learning outcome of these projects.
- During the break Inculcate healthy eating habits in your children, give them fruits and balanced diet with vitamin C and ask them to get up early in the morning.

Do breathing exercise/Yoga daily.

**For queries related to fee, new admission, transfer certificate documentation you may contact the mentioned WhatsApp number between 10 AM to 2 PM.  
(Dipanshu Sharma:- 9759431635 & Mahendra Kumar Pandey:- 8433110811)**

## ENGLISH

Prepare a project report in about 800- 1000 words on the topic assigned to you in class.

Include-

- Cover page
- Acknowledgement
- Certificate
- Index
- Project report including pictures/diagrams/mind-maps/flow charts,etc.
- Bibliography

### RUBRICS

- The project consists of 10 MARKS.
- Out of which, 5 MARKS will be allotted for the PROJECT FILE,
- And remaining 5 MARKS for the VIVA based on the file.
- The viva will be conducted by the EXTERNAL EXAMINER.

### Rubrics

Creativity	–	2M
Format and content	-	2M
Language	-	1M

## HINDI

विषय - "छायावाद से प्रगतिवाद तक हिंदी कविता की यात्रा" विषय पर एक परियोजना फाइल तैयार करें।

रूबरिक्स

- \* साफ सुथरा और आकर्षक लेआउट (अंक 2)
- \* चित्रों का प्रयोग (अंक 2)
- \* समय अवधि (अंक 1)
- \* विषय ज्ञान (अंक 5)

## MATHS

### SECTION A: CONTINUITY IN MOTION (2 MARKS)

1. **The Broken Bridge:** A road is defined by two different curves. The first part is  $f(x) = x + k$  and the second part is  $f(x) = 3x - 2$ . If the road must be smooth and continuous at the junction  $x = 2$ , find the value of  $k$ .
2. **Real-Life Context:** Explain in one sentence why a "jump" in a heart rate monitor graph represents a point of discontinuity.

### SECTION B: CHAIN RULE & SENSORS (2 MARKS)

1. **The Expanding Oil Spill:** An oil spill on a lake spreads in a circle. The area  $A$  is related to the radius  $r$  by  $A = \pi r^2$ . If the radius is growing at a rate of 2 meters per minute, use the Chain Rule ( $dA/dt = dA/dr * dr/dt$ ) to find how fast the area is increasing when the radius is 10 meters.
2. **Calculation:** Write the final derivative value with units.

### SECTION C: LOGARITHMIC GROWTH (2 MARKS)

1. **Population Modeling:** A bacterial colony grows according to the function  $y = x^x$ . To find the rate of growth ( $dy/dx$ ), you must use Logarithmic Differentiation. Solve for  $dy/dx$ .
2. **Real-Life Context:** Why is "log x" used when measuring the intensity of earthquakes (Richter Scale) or sound (Decibels)?

### SECTION D: PARAMETRIC PATHS (2 MARKS)

1. **Robot Navigation:** A robot moves in a plane such that its position at any time 't' is given by  $x = 2t$  and  $y = t^2 + 1$ . Find the slope of its path ( $dy/dx$ ) at time  $t = 3$ .
2. **Calculation:** Show the steps for  $dx/dt$  and  $dy/dt$  to reach the final answer.

### SECTION E: OPTIMIZATION (2 MARKS)

1. **The Perfect Box:** A juice company wants to make a rectangular carton with a fixed perimeter of 40 cm. Using derivatives (Maxima/Minima), prove that the maximum cross-sectional area is achieved when the shape is a square (10cm x 10cm).
2. **Real-Life Context:** Why do companies spend so much money on "Calculus Optimization" when designing their product packaging?

### PHYSICS

Make a Project file (select any one topic)

#### Topics :

1. Electric charge and field
2. Capacitor
3. Dielectric materials
4. Moving coil galvanometer
5. PN junction diode
6. Transformer
7. Ac generator
8. Current electricity
9. Magnetic materials
10. EMI
11. AC circuit
12. Atom
13. Nuclei
14. Electromagnetic wave
15. Light Reflection and refraction
16. Interference and diffraction of light

#### Rubrics

Concept Understanding & Accuracy	– 4 M
Numerical/Application & Analysis	– 2 M
Diagrams/Graphs & Data Presentation	– 2 M
Viva/Explanation & Practical Knowledge	– 1 M
Neatness, Creativity & Completion	– 1 M

### CHEMISTRY

- Make a Chemistry project atleast 15 to 20 pages for Chemistry Board practical. Topics are given below.

## Topics :

1. Study of oxalate ion content in guava fruit at different stages of ripening.
2. Analysis of adulterants in food items like milk, butter, sugar, and spices.
3. Determination of casein (protein) content in different samples of milk.
4. Determination of caffeine in tea and coffee samples.
5. Analysis of cold drinks for glucose, alcohol, and phosphate.
6. Analysis of vitamin C in various citrus fruits.
7. Colligative Properties
8. Electrochemical Cell
9. Corrosion
10. d- Block Elements
11. Werner's Theory
12. Valence Bond Theory of Coordination Compounds
13. Crystal Field Theory
14. Haloalkanes
15. Haloarenes
16. Alcohols
17. Phenols
18. Ethers
19. Aldehydes and Ketones
20. Carboxylic Acids
21. Carbohydrates
22. Proteins
23. Vitamins
24. Naming Reactions of Organic Compounds.

## Rubrics (10M)

Presentation	= 3M
Content	= 5M
Neatness	= 2M

## BIOLOGY

Theme: "Biology in Real Life & Research"

Instructions

Each student will prepare one project file

Follow the same format given below

Topics are assigned roll number wise

Project should be 10–15 pages

Include diagrams, case study, and real-life application

## Topics

1. Assisted Reproductive Technologies (ART)
2. Reproductive Health and Awareness
3. Population Explosion & Birth Control
4. Genetic Disorders – Thalassaemia
5. Genetic Disorders – Down Syndrome
6. Genetic Disorders – Hemophilia

7. DNA Fingerprinting
8. Human Genome Project
9. Mendelian Inheritance in Humans
10. Sex Determination in Humans
11. Role of Microbes in Human Welfare
12. Antibiotics: Use and Misuse
13. Immunity (Innate & Acquired)
14. Vaccination and Modern Vaccines
15. Allergies and Immune Disorders
16. Genetically Modified Crops
17. Biotechnology in Medicine
18. CRISPR (Gene Editing)
19. Tissue Culture
20. Biofertilizers & Biopesticides
21. Biodiversity Conservation
22. Endangered Species in India
23. Ecosystem and Its Components
24. Apomixis and polyembryony
25. Energy Flow in Ecosystem

### **Important Instructions**

- Use A4 sheets / file
- Maintain neat handwriting
- Highlight headings
- Avoid copy-paste
- Use own words + diagrams

### **RUBRICS (10M)**

Presentation	-	03M
Content	-	05M
Neatness	-	03M

### **ACCOUNTANCY**

#### **Rubrics:-**

Practical Work	20 marks
Practical work will include:	
Practical File	12 Marks
Viva Voce.	8 Marks
1. Initiative, cooperativeness and participation	2 Mark
2. Creativity in presentation	2 Mark
3. Content, observation and research work	4 Marks
4. Analysis of situations	4 Marks
5. Viva	8 Marks
Total	20 Marks

One specific project based on financial statement analysis of a company covering any two aspects from the following:

1. Comparative and common size financial statements

2. Accounting Ratios
3. Segment Reports
4. Cash Flow Statements

The comprehensive project may contain simple GST calculations.

Project File to record work related to the problem attempted by you in the following format :

1. First page of the file should describe the title of work, identity of student, school, and the teacher concerned.

2. Index to indicate columns for title of work, page no., date, teacher's remarks and signature.

3. The format for Project Work will be:

\*Statement of the problem Name of the Project

\* Objectives

\* Period of Study

\*Source

\*Material

\* Tools of Analysis used

\* Processing and Tabulation of data

\* Diagrammatic/ graphic presentation- pie-diagrammes, bar diagrams and graphs.

\* Derivations, Interpretation and Conclusion.

\* Assumptions (if any)

Project File should be neatly handwritten and presentable with page numbers. Each step of the solution needs to be highlighted. Conclusions drawn should be placed in boxes at the end. One specific project based on financial statement analysis of a company covering any two aspects from the following:

1. Comparative and common size financial statements
2. Accounting Ratios
3. Segment Reports
4. Cash Flow Statements

## **BUSINESS STUDIES**

### **PROJECT WORK IN BUSINESS STUDIES FOR CLASS XII:- (2026-27)**

#### **I. Project: Marketing**

1. Adhesives
2. Air conditioners
3. Baby diapers
4. Bathing Soap
5. Bathroom cleaner
6. Bike
7. Blanket
8. Body Spray
9. Bread
10. Breakfast cereal
11. Butter
12. Camera

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13. Car
  14. Cheese spreads
  15. Chocolate
  16. Coffee
  17. Cosmetology product
  18. Crayons
  19. Crockery
  20. Cutlery
  21. Cycle
  22. DTH
  23. Eraser
  24. e-wash
  25. Fairness cream
  26. Fans
  27. Fruit candy
  28. Furniture
  29. Hair Dye
  30. Hair Oil
  31. Infant dress
  32. Inverter
  33. Jams
  34. Jeans
  35. Jewellery
  36. Kurti
  37. Ladies bag
  38. Ladies footwear
  39. Learning Toys
  40. Lipstick
  41. Microwave oven
  42. Mixers
  43. Mobile
  44. Moisturizer
  45. Music player
  46. Nail polish
  47. Newspaper
  48. Noodles
  49. Pen
  50. Pen drive
  51. Pencil
  52. Pickles
  53. Razor
  54. Ready Soups
  55. Refrigerator
  56. RO system

57. Roasted snacks

58. Salt

Students are required to make a project on the identified product/service keeping in mind the following:

1. Why have they selected this product/service?
2. Find out '5' competitive brands that exist in the market.
3. What permission and licences would be required to make the product?
4. What are your competitors Unique Selling Proposition.[U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tag line.
11. What is the selling price of your competitor's product?

(i) Selling price to consumer

(ii) Selling price to retailer

(iii) Selling price to wholesaler

What is the profit margin in percentage to the  
Manufacturer.

Wholesaler.

Retailer.

12. How will your product be packaged?

13. Which channel of distribution are you going to use? Give reasons for selection?

14. Decisions related to warehousing, state reasons.

15. What is going to be your selling price?

(i) To consumer

(ii) To retailer

(iii) To wholesaler

16. List 5 ways of promoting your product.

17. Any schemes for

(i) The wholesaler

(ii) The retailer

(iii) The consumer

18. What is going to be your 'U.S.P.?

19. What means of transport you will use and why?

20. Draft a social message for your label.

21. What cost effective techniques will you follow for your product.

22. What cost effective techniques will you follow for your promotion plan.

At this stage the students will realise the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing.

Product, Place, Price, Promotion

On the basis of the work done by the students the project report should include the following:

1. Type of product /service identified and the (consumer/industries) process involve there in.
2. Brand name and the product.
3. Range of the product.
4. Identification mark or logo.
5. Tagline.
6. Labeling and packaging.
7. Price of the product and basis of price fixation.
8. Selected channels of distribution and reasons thereof.
9. Decisions related to transportation and warehousing. State reasons.
10. Promotional techniques used and starting reasons for deciding the particular technique.
11. Grading and standardization.

#### Presentation and Submission of Project Report

At the end of the stipulated term, each student will prepare and submit his/her project report.

Following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequence-
  - Cover page should include the title of the Project, student information, school and year.
  - List of contents.
  - Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
  - Introduction.
  - Topic with suitable heading.
  - Planning and activities done during the project, if any.
  - Observations and findings of the visit.
  - Conclusions (summarized suggestions or findings, future scope of study).
  - Photographs (if any).
  - Appendix
  - Teacher's observation.
  - Signatures of the teachers.

At the completion of the evaluation of the project, it should be punched in the centre so that the report may not be reused but is available for reference only.

The project will be returned after evaluation. The school may keep the best projects.

#### **Rubrics:-**

Practical Work 20 marks

Practical work will include:

Practical File 12 Marks

Viva 8 Marks

1. Initiative, cooperativeness and participation 2 Mark

2. Creativity in presentation.	2 Mark
3. Content, observation and research work	4 Marks
4. Analysis of situations	4 Marks
5. Viva	8 Marks
Total	20 Marks

### PHYSICAL EDUCATION

- 01- Physical fitness test. 6 marks (lab manual)  
 02- proficiency in games and sports (skill of any one game of choice from the given -10 marks (project file)  
 3- Yogic practice (Prepare all the Aasna for demonstration). 9 marks  
 04 Games & sports -5marks

### POLITICAL SCIENCE

Prepare a handwritten project file on any one of the following topics. The project should be neat, creative, and well-organized. Use headings, pictures, charts, maps, newspaper clippings, and current examples wherever required.

Topics

1. Relationship between India and Russia
2. Relationship between India and China
3. Relationship between India and Pakistan
4. ASEAN
5. European Union and BREXIT
6. SAARC
7. United Nations with focus on India's candidature in Security Council
8. UN Agencies – UNICEF, UNESCO, WHO
9. Partition of India – Theory behind it and its legacy
10. Comparison between NITI AAYOG and Planning Commission

Project Guidelines

- The project must be handwritten.
- Maintain neatness and proper presentation.
- Use relevant pictures and case studies.
- Original work is expected.

Suggested Format

Cover Page → Certificate → Acknowledgement → Index → Introduction → Content → Conclusion → Bibliography

### Rubrics

Introduction	1M
Content & Analysis	4M
Presentation & Creativity	3M
Conclusion	1M
Bibliography	1M

## ECONOMICS

Dear Students,

You are hereby informed that your Holiday Assignment has been assigned. As part of this assignment, you are required to select any one topic from the given list.

In addition to the provided list, you may also choose a topic from your Economics textbooks (both books). Furthermore, you are free to select any relevant topic related to Economics such as Demonetization, Digital India, Make in India, Swachh Bharat Abhiyan, etc. However, it is mandatory that your chosen topic must be related to Economics.

After selecting the topic, you must prepare a project file based on your chosen subject.

Please ensure the following guidelines are strictly followed:

The project file should be minimum 25 pages in length.

1. The content must be well-organized, neat, and informative.
2. Proper headings, subheadings, and relevant illustrations/images should be included wherever necessary.
3. The project must reflect your original work and creativity.
4. The completed file must be spiral bound; otherwise, it will not be accepted.
5. All students are advised to take this assignment seriously and submit quality work within the given time.

Best wishes for your work!

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary Policy Committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarva Shiksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of a Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – Approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – A solution to water crisis
• Vertical Farming – An alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• <i>Aatmanirbhar</i> Bharat	• e-Rupee (e- ₹)
• Sri Lanka's Economic Crisis	• Sustainable Development Goals (SDG's)
• Environmental Crisis	• Comparative Study of Economies (Maximum three economies)
• New Education Policy (NEP) 2020: A Promise for a New Education System	• G-20: Inclusive and Action Oriented
• Amrit Kaal: Empowered and Inclusive Economy	• Cashless Economy
• Any other newspaper article and its evaluation on basis of economic principles	• <b>Any other topic</b>

S.N.	Heading	Marks Alotted
1	Relevance of the topic	3
2.	Knowledge Content/Research work	6
3.	Presentation Technique	3
4.	Viva-voce	8
	Total	20 M

### COMPUTER SCIENCE

**Note: Kindly make all the following programs with output in typed format.**

- Write a program to define a function name **calculate\_total**, **caluculate\_percentage** and **Aassign\_grame** that accepts and calculate total marks, percentage, and grade of students.
- A bank calculates simple and compound interest using separate function **SIMPLE\_INSTEREST** and **COMPOUNT\_INTEREST** Principal amount is inserted as an argument where as rate and time as default arguments.
- Write a program to calculate an online store applies discounts based on purchase amount.
- A library charges fine based on overdue days.
- Write a program to calculate electricity bill based on slab rates.
- Write a program of website validating password strength.  
Write a program to calculate temperature convertor using function **TO\_CALCIOUS** and **TO\_FERENHEITE** functions.

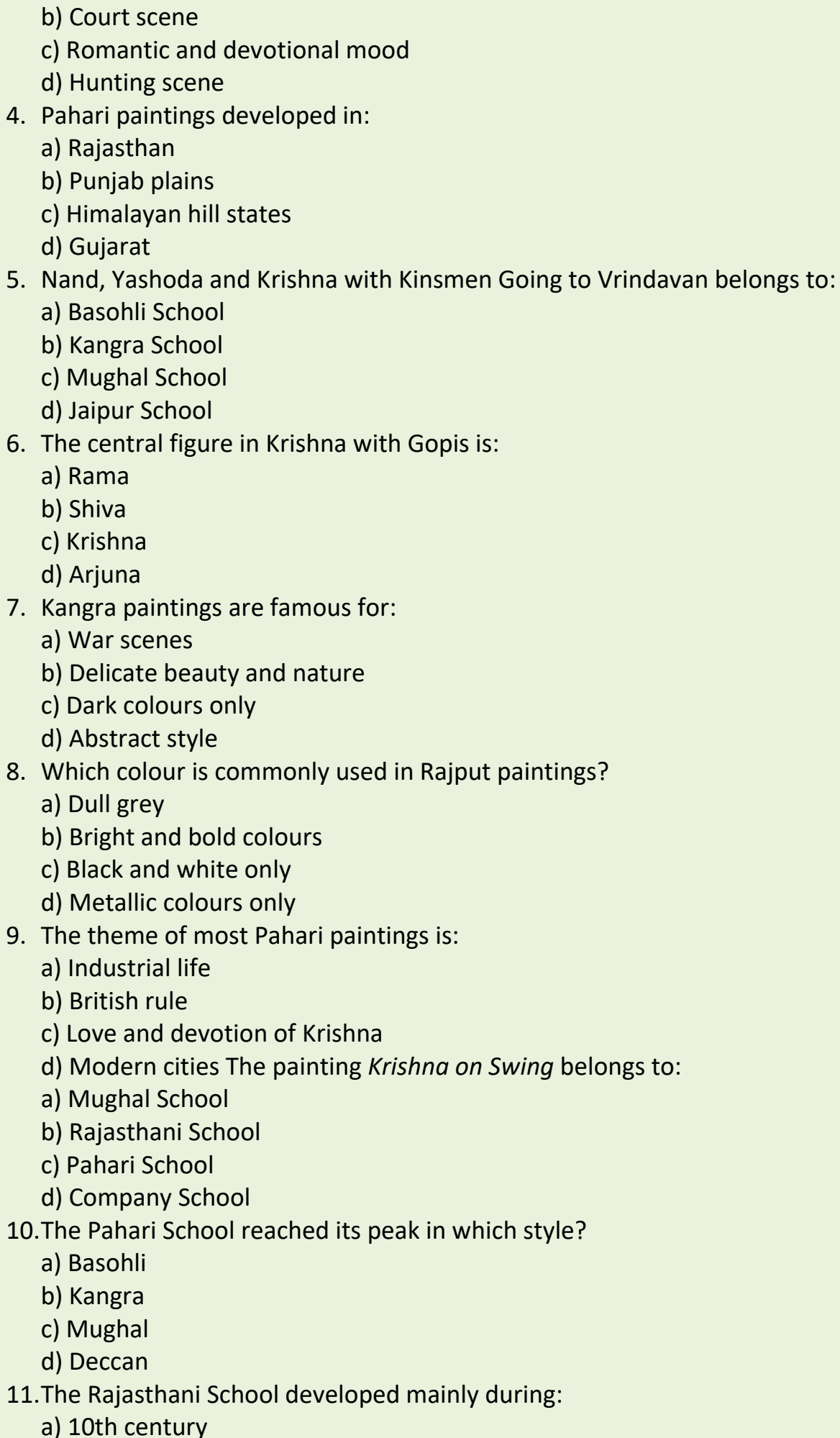
### DRAWING

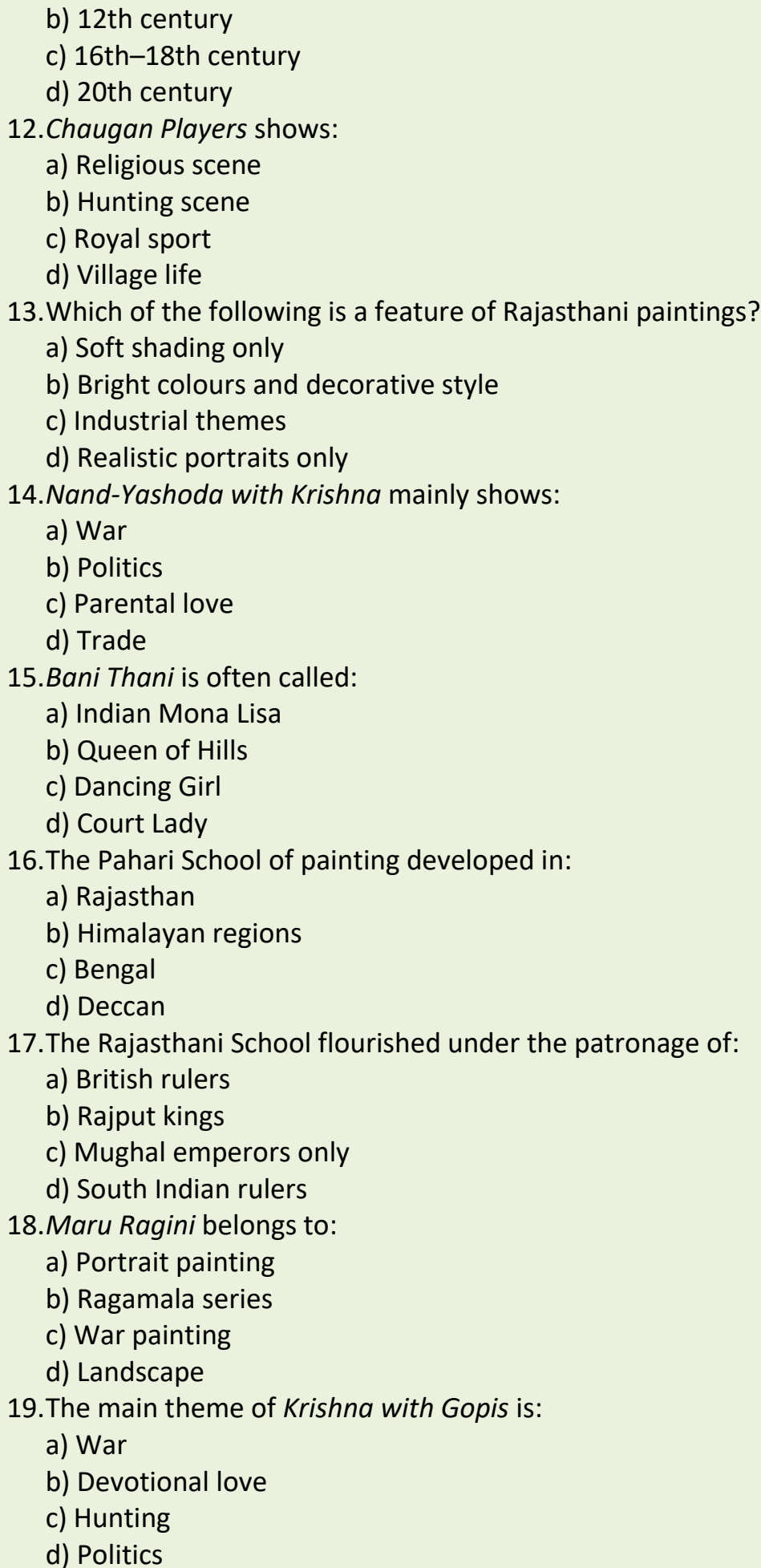
Holiday activity H.w.	M.M
<b>1 peace masterpiece on Canvas</b> <b>12 ivory sheet A3 size paintings</b> <b>With colour like composition, still life landscape, Madhubani ,painting etc.</b>	<b>30 + 10</b> <b>marks</b>

### SECTION A – MCQs ( 1 Marks Each)

Choose the correct answer:

- Bharat Meets Rama at Chitrakoot is taken from:
  - Mahabharata
  - Bhagavad Gita
  - Ramayana
  - Panchatantra
- Chitrakoot painting belongs to:
  - Mewar School
  - Bundi School
  - Mughal School
  - Bengal School
- Krishna on Swing mainly shows:
  - Battle scene

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- b) Court scene
  - c) Romantic and devotional mood
  - d) Hunting scene
4. Pahari paintings developed in:
    - a) Rajasthan
    - b) Punjab plains
    - c) Himalayan hill states
    - d) Gujarat
  5. Nand, Yashoda and Krishna with Kinsmen Going to Vrindavan belongs to:
    - a) Basohli School
    - b) Kangra School
    - c) Mughal School
    - d) Jaipur School
  6. The central figure in Krishna with Gopis is:
    - a) Rama
    - b) Shiva
    - c) Krishna
    - d) Arjuna
  7. Kangra paintings are famous for:
    - a) War scenes
    - b) Delicate beauty and nature
    - c) Dark colours only
    - d) Abstract style
  8. Which colour is commonly used in Rajput paintings?
    - a) Dull grey
    - b) Bright and bold colours
    - c) Black and white only
    - d) Metallic colours only
  9. The theme of most Pahari paintings is:
    - a) Industrial life
    - b) British rule
    - c) Love and devotion of Krishna
    - d) Modern citiesThe painting *Krishna on Swing* belongs to:
    - a) Mughal School
    - b) Rajasthani School
    - c) Pahari School
    - d) Company School
  10. The Pahari School reached its peak in which style?
    - a) Basohli
    - b) Kangra
    - c) Mughal
    - d) Deccan
  11. The Rajasthani School developed mainly during:
    - a) 10th century

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- b) 12th century  
c) 16th–18th century  
d) 20th century
12. *Chaugan Players* shows:  
a) Religious scene  
b) Hunting scene  
c) Royal sport  
d) Village life
13. Which of the following is a feature of Rajasthani paintings?  
a) Soft shading only  
b) Bright colours and decorative style  
c) Industrial themes  
d) Realistic portraits only
14. *Nand-Yashoda with Krishna* mainly shows:  
a) War  
b) Politics  
c) Parental love  
d) Trade
15. *Bani Thani* is often called:  
a) Indian Mona Lisa  
b) Queen of Hills  
c) Dancing Girl  
d) Court Lady
16. The Pahari School of painting developed in:  
a) Rajasthan  
b) Himalayan regions  
c) Bengal  
d) Deccan
17. The Rajasthani School flourished under the patronage of:  
a) British rulers  
b) Rajput kings  
c) Mughal emperors only  
d) South Indian rulers
18. *Maru Ragini* belongs to:  
a) Portrait painting  
b) Ragamala series  
c) War painting  
d) Landscape
19. The main theme of *Krishna with Gopis* is:  
a) War  
b) Devotional love  
c) Hunting  
d) Politics

20. Pahari paintings are known for:

- a) Bright harsh colours
- b) Soft colours and natural beauty
- c) Industrial scenes
- d) Abstract forms

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**SECTION B – Short Answer Questions**  
**(2 Marks Each)**

1. Describe the composition of the Krishna on swing .
2. Write two features of Chaugan players.
3. Write two characteristics of Kangra School paintings.
4. Explain the emotional aspect of Nand Yashoda with Krishna.
5. Write any characteristics of Rajasthani paintings.
6. What role does nature play in Pahari paintings.
7. Write two features of *Bani Thani*.
8. Describe the theme of *Krishna with Gopis*.
9. What is shown in *Bharat Meets Rama at Chitrakuta*?
10. Write two characteristics of Pahari paintings.
11. **Where did the Rajasthani School of painting originate? Mention any two points about its development**
12. **Mention the origin of the Pahari school and write two points about its development**

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**SECTION C – Long Answer Questions**  
**(6 Marks Each)**

1. Describe the origin and development of Rajput miniature painting.
2. Explain the artistic beauty and characteristics of Bani Thani painting.
3. Discuss the composition, colours, and theme of Bharat Meets Rama at Chitrakoot.
4. Explain the origin and development of Pahari miniature painting.
5. Compare Rajput and Pahari miniature paintings.
6. Describe Krishna with Gopis painting with reference to composition, colours, and mood.
7. **Explain the origin and development of the Rajasthani School of Miniature Painting.** Also refer to *Maru Ragini* or *Krishna on Swing*.

**Describe the origin and development of the Pahari School of Miniature Painting.** Also explain *Krishna with Gopis* or *Nand-Yashoda*.

**“YOUR FUTURE IS CREATED BY WHAT YOU DO TODAY, NOT TOMORROW.”**

\*\*\*DP\*\*\*