DAV PUBLICSCHOOL,BISTUPUR, JAMSHEDPUR

SUMMER VACATION

HOLIDAY HOME WORK

CLASS XI

SESSION 2026-2027

INDEX

ENGLISH

Q1. Make a PowerPoint Presentation on ANY ONE of the following topics related to:

1. Ancient Egypt: Egyptian Civilization
2. Egyptian History
3. Egyptian Mythology
4. The Construction of Pyramid
5. Mysteries of the Pharoahs

(ALS: Speaking Test will be based on the prepared Presentations)

Q2. Model Making: Design and make a mask inspired by the Egyptian Pharaohs using creative materials.

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MATHEMATICS

1. Draft all pre-requisite knowledge regarding Chapter 3. Trigonometric functions as per following subtopic (i). Understanding of Angles & Measurement
   (ii) Right Triangle Trigonometry
   (iii) Standard Trigonometric Values (conceptual memory to develop on triangle /unit circle).
   (iv) Algebraic skills (Factorisation, Rationalisation, Componendo and dividendo, Surds manipulation, Identities, Solving Linear & Quadratic Equations).
   (v) Co-ordinate Geometry Basics
   (vi) Conceptual understanding of Undefined Vs Infinity
   (vii) Graph Sense & Functional Idea .

2. Explore the meaning of "Golden Rectangle and Golden Ratio and their relationship with some other mathematical concepts.

3. Reading Assignment : Students will read about - a) Srinivasa Ramanujan,
   b) Aryabhata,
   c) History of mathematics in AI, space and finance.
   Then write 1-2 page reflection on the basis of your reading.

4. Prepare a Mathematical Thinking Journal(maintain as "Math Thinking Notebook")
   Weekly you need to wtite: a) One new concept learned
   b) One doubt/question
   c)One real-life application
   d) One challenging problem solved by you .
5. Complete all the exercises of NCERTclass 11 maths book from chapter 1 & chapter 2 in your maths copy & revise it in well manner.

Activities to be completed in mathematics lab manual(mentioned below)

1. To represent set theoretic operations using venn Diagrams.
2. To verify distributive law for three given non-empty sets A,B and C.
3. To distinguish between a relation and a function.
4. To verify the relation between the degree measure and the radian measure of an angle .
5. To find the valuesof sine and cosine functions in second, third and fourth quadrants using the given values in first quadrant.

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PHYSICS

TOPICS: Vectors, Unit & Dimension, Motion in a Straight Line

1. Solve all questions in Physics notebook. Show complete working + diagrams.

2. Submission: First Physics period after summer break |

A. UNIT & DIMENSIONS [Q1 to Q5]

1. If energy E, velocity v, and time T are chosen as fundamental quantities, find dimensional formula for surface tension S.

2. The side of a cube is measured as (7.203 ± 0.001) cm. Find maximum percentage error in volume. If density ρ = (11.2 ± 0.1) g/cm³, find mass with error limits.

3. In a new system, unit of mass is α kg, unit of length is β m, unit of time is γ s. The numerical value of gravitational constant G = 6.67 × 10^-11 N m²/kg² in SI. Find its value in new system. If α = 10, β = 10, γ = 10, is G numerically larger or smaller?

4. A quantity X is given by X = (ε□ L ΔV) / Δt. Where ε□ = permittivity, L = length, ΔV = potential diff, Δt = time interval. Identify X by finding its dimensions. Can X = I where I is current?

5. By dimensional method, derive S = ut + ½at². What is the limitation you face? How does calculus resolve it? Give one physical situation where S = ut + at² is dimensionally correct but physically wrong.

B. VECTORS [Q6 to Q10]

6. Vectors A = 2i + 3j - k and B = i - j + 2k. Find: a) Unit vector perpendicular to both b) Area of parallelogram formed by A and B.

7. Rain appears to fall at 37° with vertical to a man walking at 3 km/h. When he doubles speed, rain appears at 53° with vertical. Find actual velocity of rain. sin 37° = 3/5.

8. A river 500 m wide flows at 3 m/s. You can swim at 5 m/s in still water. You want to reach point exactly opposite on other bank in minimum time, but you must also pick a floating box 100 m downstream from starting point. Find angle to swim, total time, and drift if you ignore box.

9. For any two vectors P and Q, prove: $|P + Q|^2 + |P - Q|^2 = 2(|P|^2 + |Q|^2)$. Using this, if diagonals of parallelogram are 10 and 6, and one side is 4, find other side. Can this be solved without above identity?

10. Force $F = (\alpha xy)i + (\beta z)j + (\gamma x)k$ acts on particle. Find dimensions of α, β, γ if x,y,z are coordinates. If particle moves from (1,0,0) to (0,1,1), is work done by F path-dependent? Use concept of gradient.

C. MOTION IN A STRAIGHT LINE [Q11 to Q15]

11. A ball dropped from 100 m. After 2s, second ball is thrown down at 40 m/s. When and where do they meet? Take $g = 10\ m/s^2$. Plot their x-t graphs on same axes.

12. The acceleration-time graph of a particle is a semicircle of radius R with centre at (R,0) for t: 0 to 2R. If v(0) = 0, find velocity at t = 2R. Hint: Area under a-t = Δv.

13. A particle starts from rest and acceleration is $a = \alpha\sqrt{v}$ where $\alpha = 2\ m^{1/2} / s^{3/2}$. Find: a) v(t) b) x(t) c) Time to cover 100 m. What happens to acceleration as $t \to \infty$?

14. An elevator goes up with constant acc $2\ m/s^2$. At t = 0, a bolt falls from ceiling 2.7 m above floor. After bolt hits floor, elevator acc reverses to $2\ m/s^2$ downward. Find total time from t = 0 till bolt hits ceiling again. $g = 10\ m/s^2$.

15. A car starts from rest with acc $a = 2\ m/s^2$ for 10s, then decelerates at $1\ m/s^2$ to rest.

a) Draw v-t graph and find total distance.

b) If a bike starts 100 m behind car at t = 0 with constant speed u, find minimum u to catch car before it stops.

c) If u = 15 m/s, find time of overtake and whether car is accelerating or decelerating then.

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CHEMISTRY

1) State the following:
   a) Hunds rule b) Aufbau Principle c) Heigenberg's uncertainty principle
   d) Law of conservation of mass e) Law of reciprocal proportion

2) Write short notes on the following:
   a) Relative molecular mass b) Average molecular mass
   c) Molar mass d) Avogadro's constant e) Limiting reagent

3) Arrange the following in increasing order of their atomic number:
   Cr, Ca, Cl, Co, C, Cu, Ce, Cs, Cd, Cn, Cm

4) Write three drawbacks of Rutherford's model of an atom.

5) The atomic spectrum of Hydrogen is found to contain a series of lines at wavelength 656.46, 486.27,434.17 and 410.29nm. What will be the wavelength of the next line in the series?

6) Solve all the questions of exercises of first and second chapters of NCERT Chemistry book.

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BIOLOGY

1)Slide preparation on topics provided based on class11 syllabus.

2) Solve the following question:

a)Classify bacterial on the basis of its staining property.

b)Describe bacterial structure in detail with labelled diagram.

c)Mention the types of Archaebacteria and their specific features.

d)Describe the different system of classification.

e)Diiferentiate between phycobiont and mycobiont.

f)Mention the mode of reproduction in different classes of Fungi.

g)Using flow chart classify kingdom Plantae

h)Write short note on Viruses.

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BIOTECH

1. Scientist Trading Cards
   Prepare 5 scientist cards like cricket or Pokémon cards
   Each card should contain
   - Picture
   - Birth country
   - Major discovery
   - Interesting fact
2. Biotechnology in My Kitchen
   Observe biotechnology around you at home. Write short note with its nutritive values.
3. Biotech News Report
   Collect 3 recent biotechnology new articles from newspaper/magazines/internet.
4. Create a slogan or poster on:
   Biotechnology: Past discoveries, Future Possibilities.
   Example: “From curd to cloning- biotechnology is everywhere”.

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HISTORY

Project Work (Internal Assessment – 20 Marks)

As per CBSE guidelines, Class 11 History focuses on World History themes such as early civilizations, empires, cultural traditions, and modernization. The syllabus is divided into four major sections: Early Societies, Empires, Changing Traditions, and Towards Modernisation .

Objective • Develop historical enquiry and research skills • Understand global civilizations and their impact • Enhance analytical and presentation abilities • Promote independent learning and creativity • Connect theory with real-life examples • Improve presentation and project-writing skills	**Instructions for Students** • Choose any ONE topic from the list below • Project must be handwritten (20–25 pages) • Include maps, diagrams, pictures, and timelines • Add case studies, sources, and illustrations • Submit in a well-decorated file with proper format • Use NCERT textbook as primary source
Compulsory Project Format A. Cover Page B. Certificate C. Acknowledgement D. Index E. Introduction F. Main Content (with headings/subheadings) G. Case Studies / Maps / Pictures H. Conclusion I. Bibliography	**Assessment Criteria** • Content Accuracy & Research- 6 • Presentation & Creativity- 4 • Analysis & Understanding- 4 • Viva Voce & File Work- 4+2=6 • **Total- 20 Marks**

Suggested Project Topics

Section A: Early Societies Mesopotamian Civilization (Urban life, writing system, trade, culture) Importance of Writing in Early Civilizations (Role of scripts in administration and economy)	**Section B: Empires** Roman Empire (Administration, society, slavery, economy) Nomadic Empires – Genghis Khan and Mongols (Expansion, governance, global impact)
Section C: Changing Traditions Feudalism in Europe (The Three Orders) (Clergy, nobility, peasants, social structure) The Renaissance Movement (Art, literature, humanism) Reformation Movement (Church reforms, Martin Luther, impact) Scientific Revolution & Age of Exploration (New discoveries and global connections)	**Section D: Towards Modernisation** Displacement of Indigenous People (America & Australia – impact of colonization) Modernisation of Japan (Meiji Restoration and industrial growth) China's Path to Modernisation (From Sun Yat-sen to Mao Zedong) Comparison of China and Japan's Modernisation

GEOGRAPHY

Prepare a A3 file and write down the following topics taking a reference from NCERT book.

A. Introduction to Maps

- Introduction to Maps
- Essentials of Map making
- Types of Maps
- Uses of Maps

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ECONOMICS

1. Find out the value of median from the following series:
   X: 10 12 16 14 13 15 18

2. When is a Production Possibility Frontier a downward sloping straight line?

3. State and discuss any two factors that will shift the Production Possibility Curve to the left?
4. Calculate the median value for the following series.

Wages in '000	15	18	22	21	25
No. of workers	8	12	10	12	8

5. The mean marks of 10 students in Economics of class XI in the session 2025-26 is 80. Later on, it was found that the marks of two students were wrongly written as 50 and 65 instead of 78 and 75. Calculate the correct mean marks.
6. What is the implication of a point on the PPC, inside the PPC and outside the PPC?
7. What is MOC? What will be the shape of PPC when MOC is decreasing?
8. Complete the following table.

Units of X	1	2	3	4	5
Units of Y	20	18	15	11	6
MOC					

9. What ate the central problems of an economy? Why do they arise?
10. Explain the central problem of' how to produce'?

COMPUTER SCIENCE

I. DATA REPRESENTATION

1. Convert 92 from decimal to base 2
2. Convert 1101 1010 0110 1110 from binary to base 16
3. Convert 101 110 011 from binary to base 8
4. Convert 27 from base 8 to binary
5. Convert 9 from decimal to binary
6. Convert 156 from decimal to base 2
7. Convert 110 101 from binary to base 8
8. Convert 65 from octal to binary
9. Convert A3C from base 16 to base 2
10. Convert 011 101 100 from binary to base 8

II. Answer the following questions:

1. Write any two differences between high-level language and low-level language.
2. Write any two differences between cache memory and main memory.
3. Write any two differences between hardware and software.
4. What is the difference between operating system and utility software?
5. What is the significance of ASCII?

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INFORMATION PRACTICES

Section A: Conceptual Revision (Theory)

(Answer in your notebook)

I. Explain the following:

1. IPO Cycle with an example
2. Types of Memory (Primary vs Secondary)
3. Difference between Compiler and Interpreter

II. Answer briefly:

1. What is the difference between = and == , / and //, is operator and ==?
2. Define variables and data types with examples
3. What are keywords? Give 5 examples.
4. Write differences RAM vs ROM
5. What is the role of cache memory.

Section B: Python Programming Practice

🔻 Part 1: Basic Programs

Write Python programs for:

1. Input a number and check whether it is even or odd
2. Find the largest of three numbers
3. Calculate simple interest
4. Input marks of 5 subjects and calculate percentage

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CHAPTER-1

HIGHER ORDER THINKING SKILLS (HOTS) QUESTIONS

1. Which stakeholder group would be most interested in:

(a) tax liabilities of the firm.

(b) the potential for pay awards and bonus deals.

(c) the ethical or environmental activities of the firm.

(d) whether the firm has a long-term future.

(e) profitability and share performance.

(f) the ability of the firm to carry on providing a service or producing a product.

2. Arrange the following steps of Accounting Process in the correct sequence:

(i) Recording the financial transactions.

(ii) Summarising the transactions.

(iii) Identification of Financial Transactions and Events.

(iv) Classifying them through Ledger.

(v) Measurement of Transactions in terms of money.

(vi) Communicating the financial data to interested parties.

(vii) Analysing and Interpreting the financial data.

3. Which qualitative feature of accounting is reflected in the following cases:

(a) Unnecessary and irrelevant information is not included in Financial Statements.

(b) Facilitates intra-firm and inter-firm comparison.

(c) Information is clearly presented.

(d) Free from Error and Bias.

4. Identify the stakeholder group who would be most interested in the following:

(i) The ethical or environmental activities of the firm.

(ii) Whether the firm has a long-term future.

(iii) The ability of the firm to carry on providing quality products.

CHAPTER-2

I. Explain The Important Accounting Terms :-

1. Entity2. Business Transaction3. Capital

4. Drawings5. Liabilities (Non-Current andCurrent)

6. Assets (Non-Current and Current) 7. Receipts

8.Expenditure (Capital, Revenue andDeferred)9. Expense

10. Revenue 11. Income 12.Profit

13.Gain 14.Loss 15.Purchases and Purchases Return

16.Sales and Sales Return 17.Goods

18.Stock 19.Trade Receivables (Debtors and Bills Receivable)

20. Trade Payables (Creditors and BillPayable) 21. Voucher

22. Discount (Trade Discount andCash Discount)

II. Other Important Accounting Terms

23. Account29. Solvent

24. Entry30. Rebate

25. Debit and Credit31. Financial Statement

26.Proprietor32. Depreciation

27.Bad Debts33. Book Value

28.Insolvent34. Invoice

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BUSINESS STUDIES

1. **Business in the News**
   Collect 10 newspaper or magazine clippings over the holidays. For each clipping, identify: type of business activity, industry category, and business objective it relates to. Paste them in your notebook with annotations.

2. **Theme: "From Idea to Market"**
   Imagine you are launching a small business during your holidays.**Create your own business concept and present it as a startup file or mini portfolio.**
   - **A)** Step 1: Business Idea Creation
     - Give your business a *unique name & logo*
     - What will you sell? (Product/Service)
     - Why did you choose this idea? (Problem it solves)
   - **B)** Step 2: Identify the Type
     - Is your business related to:
       Industry (manufacturing/production) or Commerce* (buying & selling)
     - Explain with reasoning
   - **C)** Step 3: Journey of Your Product
     - Explain how your product moves from idea to customer. (Use a flowchart or diagram)
   - **D)** Step 4: Commerce in Action
     - Explain how transport, banking, insurance and advertising will help your business. Connect with real life examples.
   - **E)** Step 5: Innovation Challenge
     - Add at least *ONE creative twist*
   - **F)** Step 6:Pitch
     - Prepare a 2–3minute business pitch as if you are presenting to investor.

3. **Answer the following questions in your notebook:**

i) Distinguish between industry and commerce. Why is commerce considered an essential link between producers and consumers? Give two examples to support your answer.

ii) "Regularity and profit motive are two essential features of business." Explain this statement with suitable examples. Can a single transaction be called business? Justify.

iii) Explain how the following auxiliaries to trade remove specific hindrances in commerce: (a) Warehousing, (b) Insurance, (c) Advertising, (d) Banking.

iv) Classify the following into profession, employment, and business, giving reasons: (a) A chartered accountant running his own practice, (b) A teacher working in a government school, (c) A person running a grocery store, (d) A lawyer working in a law firm for a salary.

v) "Business risk arises from uncertainty, but not all uncertainties are business risks." Critically examine this statement. Discuss any four causes of business risk with examples. How can a business minimise (not eliminate) risk?

vi) "Profit maximisation cannot be the sole objective of a business in the modern world." Do you agree? Explain the multiple objectives a modern business must pursue. Support with real-life examples.

vii) Explain the different types of industries with examples. Draw the flow chart showing the types of industry.

viii) "Commerce is nothing but the sum of all the hindrances in trading, and the sum of all the means taken to overcome those hindrances." Analyse this statement by explaining any five hindrances in trade and the corresponding means (auxiliaries) that overcome each. Is there any hindrance that cannot yet be fully overcome? Discuss.

ix) Meena Textiles is a medium-sized garment exporting firm based in Surat. In 2023, the firm faced several setbacks: (i) a major flood damaged the warehouse storing finished goods worth ₹40 lakh, (ii) a key employee misappropriated funds, (iii) a sudden government regulation banned the export of certain synthetic fabrics, and (iv) international demand for Indian garments fell due to global recession. Despite these challenges, the firm survived because it had taken comprehensive insurance and maintained a financial reserve fund.

a) Identify the type and cause of business risk in each of the four situations.

b) What do the firm's survival strategies (insurance and reserve fund) tell us about the nature of business risk? Can all business risks be insured against? Explain.

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PHYSICAL EDUCATION

- PRACTICAL 1 – FITNESS TESTS ADMINISTRATION. (SAI KHELO INDIA FITNESS TEST)

- PRACTICAL 2 – PROCEDURE FOR ASANAS, BENEFITS & CONTRAINDICATION. (TWELVE ASANAS)

- PRACTICAL 3 – HISTORY OF THE GAME, LABELLED DIAGRAM OF FIELD AND EQUIPMENTS, MENTION ITS RULE, TERMINOLOGIES, NATIONAL & INTERNATIONAL AWARDEES, TOURNAMENTS NAME. ANYONE GAME OF YOUR CHOICE FROM IOA RECOGANISED LIST OF GAMES.

NOTE: WRITE ALL THE PRACTICAL IN YOUR PHYSICAL EDUCATION PRACTICAL COPY.

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POLITICAL SCIENCE

Objective

- To develop analytical and research skills
- To understand international events and democratic processes
- To connect theory with real-life examples
- To develop 21st-century skills such as communication, cooperation, coordination, critical thinking, creativity, and collaboration to produce independent work
- To improve presentation and project-writing skills

Instructions for Students

- Choose **ONE** project from History or Political Science
- The project must be **handwritten (10–15 pages)**
- Include **maps, case studies, pictures, and diagrams**
- Use the **NCERT textbook as the primary source**
- **Prepare the project in your notebook, not in a file**

Compulsory Project Format

A. Cover Page
B. Certificate
C. Acknowledgement
D. Index
E. Introduction
F. Main Content (with headings and subheadings)
G. Case Studies / Maps / Pictures
H. Conclusion

Additional Requirements

- Create **mind maps**
- Use **real-life examples** (international relations, summits, policies)
- Add **newspaper clippings**

Topics for Project

1. Making of the Constitution
2. Fundamental Rights

3. Social justice and ethics followed in Indian politics

Final Instructions

- Choose **only ONE** project
- The project must be **handwritten (10–15 pages)**
- Include **maps, case studies, pictures, and diagrams**
- Use the **NCERT textbook as the primary source**
- **Prepare the project in your notebook, not in a file**

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