



مدارس داراة السلام العالمية- الرياض

Daratassalam International Delhi Public School – Riyadh

Summer Holiday Homework
Academic Session (2021–22)
CLASS – XII



SUBJECT: ENGLISH

S. No.	Subjects	Assignments
1	Creativity	Compose a poem in your own words.
2	Literature	Research on John Keats's life and his work
3	Literature	An Elementary School Classroom In A Slum
4	Advanced Writing Skills	Write an article on any of the topics.
5	Advanced Writing Skills	Draw poster on the following topics.

GENERAL INSTRUCTIONS

1. Compose a poem. It must consist of minimum three to four stanzas.
Describe all the poetic devices used in it. {Word Limit 50–100}
2. Research thoroughly on the life and works of **JOHN KEATS** as an English Poet and an Essayist. {Word Limit 200–250}
3. Read the poem, "An Elementary School Classroom In A Slum" {Flamingo} & make notes on it. {Word Limit 200–250}
4. Write an article on any **ONE** of the following topics. {Word Limit 200–250}

1	Importance of Communication Skills
2	Importance of Personality Development
3	Importance of National Scholarships for Students
4	The Impact of Advertisements on the Younger Generation
5	The Causes Of The Stress On The Modern Generation & Suggest Suitable Solutions

5. Draw poster on any **ONE** of your favourite topics. It must be decorated with photographs or hand-made portraits.

Importance of Communal Harmony	Conservation of Water
Campaign on the Promotion of Cleanliness	How To Enhance Memory
Precautions against COVID 19	Book Fair organised by your school
Importance of Health and Benefits of Exercises	Value of Books and Good Reading Habits.
Blood Donation Camp organised by your school	Adventure Sports And Eco Tourism

NOTE: All the assignments must be handwritten in neat and intelligible way in the English Note Book.

No print out shall be entertained. Prepare the poster on a chart paper.

SUBJECT: MATHEMATICS

1. Let S be the set of all straight lines in a plane. Let R be the relation on S defined by $a R b \Leftrightarrow a \perp b$. Then R is
- reflexive but neither symmetric nor transitive
 - symmetric but neither reflexive nor transitive
 - transitive but neither reflexive nor symmetric
 - an equivalence relation.
2. $f: R \rightarrow R$, defined as $f(x) = x^2$ is:
- one- one and onto
 - many-one and onto
 - one-one and into
 - many-one and into
3. Let $f(x) = \frac{x}{x^2-1}$. Then domain (f) =
- R
 - $R - \{1\}$
 - $R - \{-1\}$
 - $R - \{-1, 1\}$
4. Let $f(x) = \sqrt{9 - x^2}$, then domain of $f(x) =$
- $[-3, 3]$
 - $[3, \infty)$
 - $[-3, 0]$
 - $[-3, 9]$
5. The principal value of $\cos^{-1}\left(\frac{-1}{\sqrt{2}}\right)$ is
- $-\frac{\pi}{4}$
 - $\frac{\pi}{4}$
 - $\frac{3\pi}{4}$
 - $\frac{5\pi}{4}$
6. The value of $\tan^{-1}(1) + \sin^{-1}\left(\frac{-1}{2}\right)$ is
- $\frac{\pi}{4}$
 - $\frac{\pi}{6}$
 - $\frac{\pi}{12}$
 - $\frac{\pi}{2}$
7. Find the value of $\tan^{-1}\left(\tan\frac{7\pi}{6}\right)$ is:
- $\frac{7\pi}{6}$
 - $\frac{\pi}{6}$
 - $\frac{\pi}{4}$
 - $\frac{\pi}{2}$
8. If $[2x \quad 4] \begin{bmatrix} x \\ -8 \end{bmatrix} = [0]$, the positive value of x is:
- 2
 - 2
 - 4
 - 4
9. If $\begin{bmatrix} a+4 & 3b \\ 8 & -6 \end{bmatrix} = \begin{bmatrix} 2a+2 & b+2 \\ 8 & a-8b \end{bmatrix}$, then the value of a and b is
- $a = 1, b = 2$
 - $a = 2, b = -1$
 - $a = -1, b = -2$
 - $a = 2, b = 1$
10. If $A = \begin{bmatrix} -2 & 5 \\ -1 & 3 \end{bmatrix}$, adj. $A =$
- $\begin{bmatrix} -2 & -1 \\ 5 & 3 \end{bmatrix}$
 - $\begin{bmatrix} 3 & -5 \\ 1 & -2 \end{bmatrix}$
 - $\begin{bmatrix} -2 & 5 \\ 3 & -1 \end{bmatrix}$
 - $\begin{bmatrix} -2 & 5 \\ -1 & 3 \end{bmatrix}$
11. If $\begin{vmatrix} 3x & 7 \\ -2 & 4 \end{vmatrix} = \begin{vmatrix} 8 & 7 \\ 6 & 4 \end{vmatrix}$, then the value of x is
- 2
 - 3
 - 2
 - 3

12. The value of $\begin{vmatrix} x^2 - x + 1 & x - 1 \\ x + 1 & x + 1 \end{vmatrix}$ is _____.
13. If A is a nonsingular square matrix of order n , then $|\text{adj } A| =$ _____
14. If $y = \frac{1 - \tan x}{1 + \tan x}$, then $\frac{dy}{dx} =$ _____.
15. If $A = \begin{bmatrix} 3 & -5 \\ -4 & 2 \end{bmatrix}$, then $A^2 =$ _____
16. The slope of the tangent to curve $y = 2x^2 + 3\sin x$ at $x = 0$ is _____.
17. If $x = a \sec \theta$, $y = b \tan \theta$ then $\frac{dy}{dx} =$ _____.
18. If $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$, find $(A - A')$
19. If $y = \sqrt{x + \sqrt{x + \sqrt{x + \dots \infty}}}$ find dy/dx
20. If $y = 2^x$ then find dy/dx .
21. Find the maximum and minimum value of $(\sin 2x + 5)$.
22. Find the intervals on which the function $f(x) = (10 - 6x - 2x^2)$ is strictly increasing.
23. Find the equation of tangent to the curve $y = x^3 - 2x + 7$ at $(1, 6)$
24. Find the domain and range of the real function, defined by $f(x) = \frac{x^2}{1+x^2}$.
Show that f is many-one.
25. Find the domain and range of the real function, defined by $f(x) = \frac{1}{(1-x^2)}$
26. Find the value of: $\cos[\tan^{-1}\{\sin(\cot^{-1}x)\}]$
27. Prove that: $\tan^{-1}\left(\frac{\sqrt{1+x^2}-1}{x}\right) = \frac{1}{2}\tan^{-1}x$
28. If $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$, and $B = \begin{bmatrix} 2 & -2 & -4 \\ -1 & 3 & 4 \\ 1 & -2 & -3 \end{bmatrix}$, find AB
29. If $\begin{vmatrix} x+1 & x-1 \\ x-3 & x+2 \end{vmatrix} = \begin{vmatrix} 4 & -1 \\ 1 & 3 \end{vmatrix}$, find the value of x .
30. Show that the function $f(x) = \begin{cases} 3x - 2 & \text{when } x \leq 0 \\ x + 1 & \text{when } x > 0 \end{cases}$ is discontinuous at $x = 0$.
31. If $e^x + e^y = e^{x+y}$, prove that $\frac{dy}{dx} = -e^{(y-x)}$

32. Prove that:

$$\cot^{-1} \left\{ \frac{\sqrt{1 + \sin x} + \sqrt{1 - \sin x}}{\sqrt{1 + \sin x} - \sqrt{1 - \sin x}} \right\} = \frac{x}{2}, x \in \left(0, \frac{\pi}{4}\right)$$

33. Prove that:

$$\tan^{-1} \left\{ \frac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}} \right\} = \frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$$

34. If $f(x) = x^2 - 5x + 7$ and $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, find $f(A)$.

35. Find the inverse of the matrix:

$$\begin{bmatrix} 3 & -10 & -1 \\ -2 & 8 & 2 \\ 2 & -4 & -2 \end{bmatrix}$$

36. Given that:

$$f(x) = \begin{cases} \frac{(1 - \cos 4x)}{x^2}, & \text{if } x < 0 \\ a, & \text{if } x = 0 \\ \frac{\sqrt{x}}{\sqrt{16 + \sqrt{x}} - 4}, & \text{if } x > 0 \end{cases}$$

if $f(x)$ is continuous at $x = 0$, find the value of a .

37. If the following function $f(x)$ is continuous at $x = 0$, find the value of k

$$f(x) = \begin{cases} \frac{1 - \cos 2x}{2x^2}, & x \neq 0 \\ k, & x = 0 \end{cases}$$

38. If $y = \frac{e^{x^2} \tan^{-1} x}{\sqrt{1+x^2}}$, find $\frac{dy}{dx}$.

39. Show that $y = \log(1+x) - \frac{2x}{2+x}$, $x > -1$ is an increasing function of x throughout its domain.

40. Given $A = \begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$, find AB use the product to solve the following system of equations:

$$x - y + 2z = 1; \quad 2y - 3z = 1; \quad 3x - 2y + 4z = 2$$

41. If $A = \begin{bmatrix} 1 & 2 & -3 \\ 2 & 3 & 2 \\ 3 & -3 & -4 \end{bmatrix}$, find A^{-1} and hence solve the system of linear equations:

$$x + 2y - 3z = -4; \quad 2x + 3y + 2z = 2; \quad 3x - 3y - 4z = 11$$

42. Consider $f: R_+ \rightarrow [5, \infty)$ given by $f(x) = 4x^2 + 12x + 5$. Show that f is one-one onto.

43. If $(\tan^{-1}x)^y + y^{\cot x} = 1$, the find $\frac{dy}{dx}$

44. Show that semi vertical angle of a right circular cone of given surface and maximum volume is $\sin^{-1}\left(\frac{1}{3}\right)$

45. Show that the height of the cylinder of maximum volume that can be inscribed in a sphere of radius R is $2R/\sqrt{3}$. Find the volume of the largest cylinder inscribed in a sphere of radius R .

SUBJECT: PHYSICS

1. Do all the solved examples of text book chapters 1-6.
2. Make a project on any topic of Physics for the board exams

SUBJECT: CHEMISTRY

Complete the following assignment in chemistry note book.

1. Write the chemical equations to illustrate each of the following name reactions:

Wurtz reaction

Wurtz -Fittig reaction

Fittig reaction

Swarts reaction

Hunsdecker reaction

Friedel Crafts reaction

Coupling reaction

Kolbe's reaction

Reimer-Tiemann reaction

Williamson Synthesis

2. Read the given passage and answer the questions (i) to (v) that follow.

Dissolution of solids in water can be exothermic or endothermic process but gases dissolve in water always with the evolution of heat. Dissolution of a substance in water can be either because ion dipole interactions or by hydrogen bond formation. Pressure plays a significant role on the solubility to gases in water. Solubility of a gas in terms of mole fraction(x_B) is related to pressure(p) according to the mathematical relation $P=K_H x_B$. On the basis of above paragraph answer the following questions.

- (i) How can you explain dissolution of sugar in water?
- (ii) In which law, the mathematical relation $P=K_H x_B$ is based on?
- (iii) The value of K_H for N_2 gas in water at 298 K is 86.76 K bar, the value of K_H for N_2 g in water at 303 K in K bar is-----
 - (a) 86.76
 - (b) >86.76
 - (c) <86.76
 - (d)unpredictable

(iv) What will happen when a pinch of salt (NaCl) is added to freshly opened bottle of cocacola or limca?

(v) Solubility of KCl in water increases with the rise in temperature. This means that $\Delta_{\text{diss}}H$ of KCl in water

- (a) $\Delta_{\text{diss}}H = 0$ (b) $\Delta_{\text{diss}}H < 0$ (c) $\Delta_{\text{diss}}H > 0$ (d) unpredictable

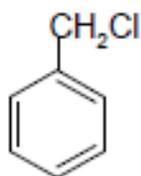
3. Write the structures and IUPAC names of the cross-aldol condensation products only of

ethanal and propanal.

4. Calculate the freezing point of a solution containing 8.1 g of HBr in 100 g of water, assuming the acid to be 90 % ionized. [Given: Molar mass Br = 80 g/mol, K_f , water = 1.86 K kg / mol]

5. Which one of the following compounds will undergo faster hydrolysis reaction by S_N1

mechanism? Justify your answer.



or $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$

6. Give chemical tests to distinguish between the following pairs of compounds:

(i) Ethanal and Propanone.

(ii) Pentan-2-one and Pentan-3-one.

7. Account for the following:

(i) Alcohols are comparatively more soluble in water than hydrocarbons of comparable molecular masses. Explain this fact.

(ii) Phenol is more acidic than ethanol.

(iii) Alkyl halides though polar, are immiscible with water.

8. 18 g of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) is dissolved in 1 kg of water in a saucepan. At what temperature will water boil at 1.013 bar? K_b for water is $0.52 \text{ K Kg mol}^{-1}$

9. Find the molality and molarity of a 15% solution of H_2SO_4 when its density is 1.10 g/cm^3 & molar mass = 98 amu.

10. Calculate the mole fraction of ethylene glycol ($\text{C}_2\text{H}_6\text{O}_2$) and water in a solution containing 20% of $\text{C}_2\text{H}_6\text{O}_2$ by mass.

11. When a certain conductance cell was filled with 0.1 M KCl, it has a resistance of 85 ohms at 25°C . When the same cell was filled with an aqueous solution of 0.052 M unknown electrolyte, the resistance was 96 ohms. Calculate the molar conductance of the electrolyte at this concentration.

[Specific conductance of 0.1 M KCl = $1.29 \times 10^{-2} \text{ ohm}^{-1} \text{ cm}^{-1}$]

12. Calculate the degree of dissociation (α) of acetic acid if its molar conductivity (Λ_m) is $39.05 \text{ S cm}^2 \text{ mol}^{-1}$.

SUBJECT: BIOLOGY

ANSWER THE GIVEN QUESTIONS

1. How does EcoRI specifically act on DNA molecule? Explain.

2.(a) Explain the cause responsible in a human to have sex chromosomes as 'XXY' instead of 'XX' or 'XY'.

(b) List any two ways such individuals are different from the normal being.

3. Mention the kind of interaction mycorrhizae exhibit. How is Glomus in mycorrhizal association beneficial to the plants?

4. Given below is the segment of a DNA strand. Write its complementary strand and the RNA strand that can be transcribed from the DNA molecule formed.

5' TAC CGT GAC GTC 3'

5. "Cotton bollworms enjoy feeding on cotton plants, but get killed when feed on Bt cotton plant." Justify the statement

6.(a) Mention the cause of ADA deficiency in humans.

(b) How is gene therapy carried out to treat the patients suffering from this disease?

(c) State the possibility of a permanent cure of this disease.

7.(a) Differentiate between intrauterine insemination and intrauterine transfer.

(b) Mention one positive and one negative application of amniocentesis.

8. Mention the chemical nature of an antibody and name the type of cells they are produced by. Write the difference between active and passive immune responses on the basis of antibodies.

9. Name the cells that act as HIV factory in humans when infected by HIV. Explain the events that occur in these infected cells.

10.(a) Compare the mechanism of sex determination in humans with that of honey bees, with respect to chromosome number.

(b) How is the gamete formation comparable in the above two cases?

11. Differentiate between the pattern of inheritance in humans of the blood diseases, haemophilia and thalassemia.

12. Identify i, ii, iii, iv, v and vi in the following table:

No.	Organism	Bioactive molecules	Use
1	Monascus purpureus	i ii	
2	iii iv	Antibiotic	
3	v Cyclosporin A	vi	

13.(a) Write the scientific name of methanogen bacteria. Where are these bacteria generally found? Explain their role in biogas production.

(b) Name the components of biogas.

14. Given below is the diagram representing the observations made for separating DNA fragments by Gel electrophoresis technique. Observe the illustration and answer the questions that follow.

(a) Why are the DNA fragments seen to be moving in the direction A→B?

(b) Write the medium used on which DNA fragments separate.

(c) Mention how the separated DNA fragments can be visualised for further technical use.

SUBJECT: PHYSICAL EDUCATION

“Make a project on game which you have opted”.

SUBJECT: COMPUTER SCIENCE

1. Revise all the chapters, which are completed.
2. Practice the Question Answers (Solved and Unsolved) which are given after the chapter.
3. Prepare LAB MANUAL for CBSE Practical Examination.

SUBJECT: ECONOMICS

I. MAKE SHORT NOTES BELOW MENTIONED POINTS:-

- 1. COLONIAL EXPLOITATION OF THE INDAN ECONOMY UNDER THE BRITISH RULE.**
- 2. FEATURES OF INDIAN ECONOMY ON THE EVE OF INDEPENDENCE.**
- 3. AGRICULTURE SECTOR ON THE EVE OF INDEPENDENCE.**
- 4. INDUSTRIAL SECTOR ON THE EVE OF INDEPENDENCE**
- 5. FOREIGN TRADE SECTOR ON THE EVE OF INDEPENDENCE**
- 6. WAS THERE ANY POSITIVE IMPACT OF THE BRITISH RULE IN INDIA.**

II. WHY DID INDIA OPT FOR PLANNING, WRITE A SHORT NOTRES.

III. WHAT WERE THE PROBLEMS OF INDIAN AGRICULTURE.

IV. WRITE A SHORT NOTES ON AGRARIAN REFORMS.

V. LARGE SCALE INDUSTRY IS NOT A SUBSTITUTE OF SMALL SCALE INDUSTRY IN THE INDIAN ECONOMY. HOW DO YOU VIES THIS STATEMENT.

VI. HOW WAS IMPACT OF INWARD LOOKING TRADE STRATEGY ON THE DOMESTIC INDUSTRY.

VII. HOW DOES LIBERATISATION OF THE ECONOMY LEAD TO ECONOMIC GROWTH.

NOTE : THERE ARE 7 QUESTIONS, WRITE ABOUT THEM VERY BRIFLY IN YOUR OWN WORDS NOT IN BOOKISH LANGUAGE.

SUBJECT: ACCOUNTANCY

Section A Very Short Answer Questions

1. What is meant by 'Not- for- Profit' Organisations?
2. State the meaning of Receipt and Payment Account.
3. State the meaning of Income and Expenditure Account.
4. State the feature of Receipt and Payment Account.
5. What steps are taken to prepare Income and Expenditure Account from a Receipt and Payment Account?

6. What is subscription? How is it calculated?
7. What is meant by Capital Fund? How is it calculated?
8. What is meant by Divisible Profit?
9. Why it is considered desirable to make the Partnership agreement in writing?
10. Do all firms need registration and deed?
11. What do you understand by Super profit?
12. What is Sacrificing Ratio?
13. Give two circumstances in which Gaining Ratio is calculated?
14. What is Purchased Goodwill?
15. Give the formula for calculating Gaining Ratio?
16. What is Realisation Account?
17. What is Hidden Goodwill?

Section-B Short Answer Questions:

18. State the nature of Interest on capital and Interest on Drawings
19. Why is it necessary to have Reconstitution of Partnership?
20. Distinguish between Sacrificing Ratio and Gaining Ratio
21. Why is it necessary to revalue the assets and Liabilities?
22. Name any two factors affecting Goodwill of Partnership firm .

Section-C Short Numerical Questions

23. X and Y are partners in a firm sharing profits and losses in the ratio of 4:3. They admit Z in a firm and the profit sharing ratio among them will be 2:3:1 calculates the Gain or Sacrifice of Old partners.
24. A, B C were partners sharing profits in 3:3; 2. They admitted D as a new partner for $\frac{4}{7}$ profit. D acquired his share $\frac{2}{7}$ from A and, $\frac{1}{7}$ from B and $\frac{1}{7}$ from C Calculate new profit sharing ratio.
25. Abu and Adil were partners in a firm Sharing Profits in the ratio of 3:2. They admit Haseeb as a new Partner for $\frac{1}{5}$ Share. Haseeb brings Rs. 30,000 s capital

and Rs. 10,000 as premium of goodwill. New profit sharing ratio of partners will be 5:3; 2 Prepare necessary journal entries.

26. K and M were partners in a firm sharing profits in the ratio of 5:3. Their Fixed Capitals were Rs. 3, 00,000 and Rs.2, 00,000. The Partnership deed provide that,

- a) Interest on capital should be allowed @12%
- b) K should be allowed the salary of Rs.40, 000
- c) Commission of 5% of the net profit should be allowed to M
- d) The net profit for the year ended 31-3-2001 was Rs.2, 00,000 Make Profit and loss Appropriation Account.

SUBJECT: BUSINESS STUDIES

1.Project work : Choose any product and prepare its Marketing strategy .

2.Do the 'Case Studies' of Chapter 1 to 6