



# DAVID MODEL SENIOR SECONDARY SCHOOL

Main Road Tukmirpur

SUMMER HOLIDAYS HOMEWORK (2024-2025)

Class : XII (Commerce)

**General Instruction:** Follow the subject wise given instructions and submit the given task the very first day when the school reopens.

## ENGLISH

- Q1.** You are Health Secretary, Students Council Citizens Public School, Ram Bagh, Varanasi. The Council has decided to start from the second of October a week-long cleanliness drive around the school. Draft a notice in about 50 words asking the Class XII students to enrol for the drive.
- Q2.** Water supply will be suspended for eight hours (10 a.m. to 6 p.m.) on 6th of June for cleaning of the water tank. Write a notice in about 50 words, advising the residents to store water for a day. You are Karan Kumar/Karuna Bajaj, Secretary, Janata Group Housing Society, Palam Vihar, Kurnool.
- Q3.** You are Jasveen / Jasbir, you recently visited a significant historical site. You were astounded to discover it in such a condition of disrepair. Using your own thoughts, compose a letter to the editor of a major newspaper noting the terrible condition of significant archaeological and historical sites. Highlight the lack of vital services, the poor condition of upkeep, and people's abuse of it. Make suggestions about how to improve the issue.
- Q4.** You are Kanika / Karan. Your school's Fitness Club hosted a workshop called "Art of Living for Students." Write a letter to the editor of the local daily newspaper, giving your thoughts on the matter.
- Q5.** Write a self composed poem or article for the school magazine.

## ECONOMICS

Write answer of the given questions on A4 sheets.

- Q1.** Given the following data, find the missing value of 'Private Final consumption Expenditure' and 'operating surplus'.

S. No.	Particulars	Amount (in crores)
1	National Income	50000
2	Net Indirect Taxes	1000
3	Private Final Consumption Expenditure	?
4	Gross domestic Capital Formation	17000
5	Profits	1700
6	Government Final Consumption Expenditure	12500
7	Wages and Salaries	20000
8	Consumption of fixed Capital	700
9	Mixed Income Of Self Employed	13000
10	Operating surplus	?
11	Net Factor Income From Abroad	500
12	Net Exports	2000

**Q2.** There are only two producing sectors A and B in an economy. Calculate:

(a) Gross value added at market price by each sector

(b) Nation income

Items	RS. (in crores)
(i) NFIA	20
(ii) Sales by A	1000
(iii) sales by B	2000
(iv) Change in stock of B	(-) 200
(v) Closing stock of A	50
(vi) Opening stock of A	100
(vii) consumption of fixed capital by A and B	180
(viii) Indirect taxes paid by A and B	120
(ix) Purchase of raw materials by A	500
(x) Purchase of raw materials by B	600
(xi) exports by B	70

**Q3.** "Gross Domestic Product (GDP) does not give us a clear indication of economic welfare of a country." Defend or refute the given statement with valid reason.

**Q4.** Explain the process of money creation by a commercial bank using a hypothetical numerical example.

**Q5.** What is Investment Multiplier? Explain the relationship between investment multiplier and MPC.

**Q6.** As a result of increase in investment, national income rises by Rs. 600 crores. If marginal propensity to consume is 0.75, calculate the increase in investment.

**Q7.** If the saving function is  $S = -10 + 0.2Y$ , how the consumption function can be derived from consumption function?

**Q8.** Define:- (i) Ex-Ante Investment----- Under employment equilibrium

**Q9.** The consumption function of an economy is:  $C = 40 + 0.8Y$ . Determine that level of income where average propensity to consume will be one.

**Q10.** Complete the following:-

Income	MPC	Saving	APC
0	--	-40	--
100	--	-20	--
200	--	0	--
300	--	60	--
400	--	120	--

**Q11.** Draw a linear consumption curve and derive a saving function from it. Explain the process.

**Q12.** Make a project file on one of the following topics

- |  |  |
|--|--|
| 1) Micro and Small Scale Industries                      | 2) Food Supply Channel in India            |
| 3) Contemporary Employment situation in India            | 4) Disinvestment policy of the government  |
| 5) Goods and Services Tax Act and its Impact on GDP      | 6) Health Expenditure (of any state)       |
| 7) Human Development Index                               | 8) Inclusive Growth Strategy               |
| 9) Self-help group                                       | 10) Trends in Credit availability in India |
| 11) Monetary Policy Committee and its functions          | 12) Role of RBI in Control of Credit       |
| 13) Government Budget & its Components                   | 14) Trends in budgetary condition of India |
| 15) Exchange Rate determination – Methods and Techniques |  |
| 16) Currency War – reasons and repercussions             | 17) Livestock – Backbone of Rural India    |

- 18) Alternate fuel – types and importance  
 20) Golden Quadrilateral- Cost ratio benefit  
 22) Relation between Stock Price Index and Economic Health of a Nation  
 23) Waste Management in India – Need of the hour  
 25) Digital India- Step towards the future  
 27) Vertical Farming – An alternate way  
 29) Make in India – The way ahead  
 31) Rise of Concrete Jungle- Trend Analysis  
 33) Aatmanirbhar Bharat  
 35) Sri Lanka’s Economic Crisis  
 37) Environmental Crisis  
 38) Comparative Study of Economies (Maximum three economies)  
 39) New Education Policy (NEP) 2020: A Promise for a New Education System  
 40) G-20: Inclusive and Action Oriented  
 42) Cashless Economy  
 43) Any other newspaper article and its evaluation on basis of economic principles  
 44) Any other topic
- 19) Sarva Shiksha Abhiyan – Cost Ratio Benefits  
 21) Minimum Support Prices  
 24) Minimum Wage Rate – Approach and Application  
 26) Rain Water Harvesting – A solution to water crisis  
 28) Silk Route- Revival of the past  
 30) Bumper Production- Boon or Bane for the farmer  
 32) Organic Farming – Back to the Nature  
 34) e-Rupee (e- ₹)  
 36) Sustainable Development Goals (SDG’s)  
 41) Amrit Kaal: Empowered and Inclusive Economy

## MATHEMATICS

**Write answer of the given questions on A4 sheets.**

**Q1.** Show that  $\tan\left(\frac{1}{2} \sin^{-1} \frac{3}{4}\right) = \frac{4-\sqrt{7}}{3}$ .

**Q2.** If  $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$  and  $B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$  and  $(A + B)^2 = A^2 + B^2$ , then find the values of  $a$  and  $b$

**Q3.** If  $y = \cot^{-1} x$ , then  $(1 + x^2) y_2$  is equal to .....

**Q4.** Express  $\sin^{-1}\left(\frac{\sin x + \cos x}{\sqrt{2}}\right)$ , where  $-\frac{\pi}{4} < x < \frac{\pi}{4}$ , in the simplest form.

**Q5.** Find the value of  $\sin^{-1}\left(\sin\left(\frac{43\pi}{5}\right)\right)$ .

**Q6.** The volume of a cube increasing at the rate of  $9 \text{ cm}^3$  per second. How fast is its surface area increasing when the length of an edge is  $10 \text{ cm}$ ?

**Q7.** Differentiate  $\tan^{-1}\left(\frac{1+\cos x}{\sin x}\right)$  with respect to  $x$

$$\tan^{-1}\left(\frac{3x-x^2}{1-3x^2}\right), |x| < \frac{1}{\sqrt{3}} \text{ w.r.t } \tan^{-1}\left(\frac{x}{\sqrt{1-x^2}}\right)$$

**Q8.** 10 Find  $A$  such that  $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 \\ 1 & -2 \\ 9 & 22 \end{bmatrix}$ .

**Q9.** Let  $A = \{x \in \mathbb{Z}; 0 \leq x \leq 12\}$ . Show that

$R = \{(a, b); a, b \in A, |a - b| \text{ is divisible by } 4\}$  is an equivalence relation. Find the set of all elements related to 1. Also write equivalence class [2]. -1

**Q10.** If  $A = \begin{bmatrix} 3 & 2 & 1 \\ 4 & -1 & 2 \\ 7 & 3 & -3 \end{bmatrix}$ , then find  $A^{-1}$  hence solve the following system of equation.

$$3x + 4y + 7z = 14, \quad 2x - y + 3z = 4, \quad x + 2y - 3z = 0.$$

**Q11.** Determine the product of  $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix}$  and  $\begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$  and then use to solve system of equations.  $x - y + z = 4$ ,  $x - 2y - 2z = 9$  and  $2x + y + 3z = 1$ .

**Q12.** Let N denote the set of all natural numbers and R be the relation on N x N defined by ( a ,b) R ( c, d) if ad(b + c) = bc(a+d) . show that R is an equivalence relation.

**Q13.** If  $y = \sqrt{a + \sqrt{a + x}}$ , then find  $\frac{dy}{dx}$ .

**Q14.** If  $y = \frac{x \cos^{-1}x}{\sqrt{1-x^2}} - \log \sqrt{1-x^2}$ , then prove that  $\frac{dy}{dx} = \frac{\cos^{-1}x}{(1-x^2)^{3/2}}$ .

**Q15.** Differentiate  $\tan^{-1}\left(\frac{\sqrt{1+x^2}-1}{x}\right)$  w.r.t  $\sin^{-1}\frac{2x}{1+x^2}$ , if  $x \in (-1, 1)$ .

**Q16.** If  $x = \sin t$ ,  $y = \sin pt$ , prove that  $(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + p^2y = 0$ .

**Q17.** If  $x^m y^n = (x + y)^{m+n}$ , prove that  $\frac{d^2y}{dx^2} = 0$ .

**Q18.** If  $y = x^x$ , prove that  $\frac{d^2y}{dx^2} - \frac{1}{y} \left(\frac{dy}{dx}\right)^2 - \frac{y}{x} = 0$ .

**Q19.** If  $x = a \cos \theta + b \sin \theta$ ,  $y = a \sin \theta - b \cos \theta$ , show that  $y^2 \frac{d^2y}{dx^2} - x \frac{dy}{dx} + y = 0$ .

**Q20.** If  $y = (x + \sqrt{1+x^2})^n$ , then show that  $(1+x^2)\frac{d^2y}{dx^2} + x\frac{dy}{dx} = n^2y$ .

**Q21.** If  $A = \begin{bmatrix} 2 & 3 & 10 \\ 4 & -6 & 5 \\ 6 & 9 & -20 \end{bmatrix}$ , find  $A^{-1}$ . Using  $A^{-1}$  solve the system of equations

$$\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 2, \frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 5, \frac{6}{x} + \frac{9}{y} - \frac{20}{z} = -4.$$

**Q22.** Do all examples of NCERT from chapter 1 to 5.

**Q23.** Draw the graphs of  $\sin^{-1} x$ ,  $\cos^{-1} x$ ,  $\tan^{-1} x$ ,  $\cot^{-1} x$ ,  $\sec^{-1} x$ ,  $\operatorname{cosec}^{-1} x$  on chart paper also write their range and domain.

**Q24.** Do lab activities 1, 2 and 5.

**Q25.** Do examples of ch-1 & 5. (Remaining)

**Q26.** Do one of the following projects. (In a file) (at least 10 pages)

(i) Applications of derivative and integration (R. No.1 to 10)

(ii) Discuss the diet problem and problem of transportation (LPP). (R. No. 11 to 20)

(iii) Detailed study of work of Ramanujan (R. No. 21 to 30)

(iv) Detailed study of work of Thales and Pythagorons (R. No. 31 to 40)

(v) Draw the graphs of following functions and their inverse to establish the relation between their graphs.

(R.No. 41 to 50)

a)  $\sin x$ ,  $\sin^{-1} x$

b)  $\cos x$ ,  $\cos^{-1} x$

c)  $\tan x$ ,  $\tan^{-1} x$

d)  $\operatorname{cosec} x$ ,  $\operatorname{cosec}^{-1} x$

e)  $\sec x$ ,  $\sec^{-1} x$

f)  $\cot x$ ,  $\cot^{-1} x$

g)  $x^2$ ,  $\sqrt{x}$

h)  $e^x$ ,  $\log x$

## ACCOUNTANCY

**Write answer of the given questions on A4 sheets.**

\*Do the questions given in pdf... send in whats app group by concern teacher

## BUSINESS STUDIES

### Prepare practical file on A4 sheets

1. Principle of management

OR

2. Marketing

Alloted to students by concern teacher

## COMPUTER SCIENCE

### Write answer of the given questions on A4 sheets.

- Q1.** Differentiate between “w” and “r” file modes used in Python while opening a data file. Illustrate the difference using suitable examples.
- Q2.** Define role of random module and their functions :  
a) random ([n])                      b) randint (a, b)                      c) randrange (a, b)
- Q3.** Write the importance of file handle (file object name) in text file. Also write the role of function open() & close().
- Q4.** Write all the functions to read & write operations in the text file.
- Q5.** Differentiate between :  
a) Implicit type conversion & Explicit type conversion  
b) Local variable & Global variable  
c) Actual parameter & Formal parameter
- Q6.** What is the role of flush function in data file handling. Explain with suitable Example.
- Q7.** Define given below functions with suitable example:  
a) seek()                                      b) tell()
- Q8.** Write the importance of the ‘with’ block with suitable example.
- Q9.** What is the difference between relative path & absolute path.
- Q10.** Write all types of file opening mode in data file handling.

### Practical File

#### INDEX

S. NO.	Contents	Date of Practical	Page No.	Teacher's Sign.
1	Write a program in Python to input a number from the user and calculate if the given number is prime or not.			
2	Write a program in Python to input a string from the user and find out if the given string is palindrome or not.			
3	Write a program in Python, which inputs a list L of integers and displays the sum of all such integers from the list L which end with the digit 3.			
4	Write a program in Python, which input a list of numbers and a number to be searched. If the number exists, it is replaced by 0 and if the number does not exist, an appropriate message is displayed.			
5	Write a Python program, which takes a dictionary <b>Student</b> as input, the dictionary <b>Student</b> contains <b>Name:(Phy ,Chem, Math)</b> as <b>key:value</b> pairs, program should display the average marks of all students present in dictionary.			

6	Write a Python program to read a text file “ <b>POEM.TXT</b> ” and print the total number of <b>vowels</b> and <b>consonants</b> separately present in the text file.			
7	Write a Python program to read a text file “ <b>Input.txt</b> ” and print the words starting with ‘ <b>O</b> ’ (Lower/Upper both cases) in reverse order. The rest of the content is displayed normally.			
8	Write a Python program which reads the contents of a text file “ <b>BIOPIC.TXT</b> ” and displays the content of the file with every occurrence of the word ‘he’ replaced by ‘she’.			
9	Write a Python program to count and display the number of lines starting with ‘ <b>A</b> ’ (lower/Upper both cases) present in the text file “ <b>Lines.TXT</b> ”.			
10	Write a Python program to count and display the number of lines that have exactly 5 words in it present in the text file “ <b>Story.txt</b> ”.			

## **PHYSICAL EDUCATION**

- **Make a project File of the following topics on A4 sheets.**

**\*Practical-1**

Labelled diagram of field & equipment of any one game of your choice of the given list.  
Basketball, Volleyball, Football, Badminton, Table tennis, Cricket and chess

**\*Practical-2**

Write the procedure and benefits of any two Asanas, yogic kriyas and Pranayam.

**\*Practical -3**

a) SAI KHELO INDIA TEST

b) SENIOR CITIZEN TE