1. Find the area of the triangle whose vertices are (1,0) , (6,0) and (4,- 3).

2. If A=$\begin{bmatrix} 1 & 1 & -2 \\ 2 & 1 & -3 \\ 5 & 4 & -9 \end{bmatrix}$, find $|A|$.

3. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 5\,A + 7\,I = 0$. Hence find A^{-1}.

4. Write the function $\tan^{-1}\left[\dfrac{\sqrt{1+x^2}}{x}\right]$ $x \neq 0$ in the simplest form

5. Let $A = \begin{bmatrix} 3 & 7 \\ 2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 8 \\ 7 & 9 \end{bmatrix}$, then prove that $(AB)^{-1} = B^{-1}A^{-1}$.

6. Solve system of linear equations, using matrix method :

   x-y+2z=7 , 3x+4y-5z=-5 ,2x-y+3z=12

7. Solve system of linear equations by using matrix method:

   3x-2y+3z=8 , 2x+y-z=1 , 4x-3y+2z=4

8. Find $\dfrac{dy}{dx}$, if y=$x^{sinx}+(sinx)^{cosx}$.

9. Prove that:$\tan^{-1}(\dfrac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}})=\dfrac{\pi}{4} -\dfrac{1}{2}\cos^{-1}x$

10. Find the values of $\tan^{-1}\sqrt{3} - \cot^{-1}(-1/\sqrt{3})$?

11. Find the value of K so that the given function is continuous at the given indicated point

12. Find the value of K if $f(x) = \begin{cases} Kx^2, & x \leq 2 \\ 3, & x > 2 \end{cases}$ is continuous at x=2.

13. A ballon which is remain spherical has a variable radius. Find the rate at which its volume is increasing with the radius is 15 cm.?

14. If y = $\sqrt{sinx + \sqrt{\sin x + \sqrt{\sin x + \cdots . \infty}}}$ then find $\dfrac{dy}{dx}$

15. Express the following matrix as the sum of a symmetric and a skew- symmetric matrix; $\begin{bmatrix} 1 & 3 & 5 \\ -6 & 8 & 3 \\ -4 & 6 & 5 \end{bmatrix}$

Accountancy

Q1. Distinguish between Fixed and Fluctuating Capitals.

Q2. State any four essential features or characteristics of partnership.

Q3. Surjit and Permjit are partners. Surjit's Capital is Rs. 1,00,000 and Permjit's Capital is Rs.60,000. Interest on capital is payable @ 6% p.a. Surjit is to get salary of Rs. 3,000 per month. Net Profit for the year is Rs. 80,000. Prepare Profit and Loss Appropriation Account.

Q4. A. B and C were partners in a firm. On 1st April, 2018, their capital stood at Rs. 4,00,000; Rs. 3,00,000 and Rs. 2,00,000 respectively. As per the provisions of the Partnership Deed.
 A was entitled to a salary of Rs. 5,000 per month.
Partners were entitled to interest on capital @ 10% p.a.
The net profit for the year ended 31st March 2019, Rs. 3,00,000 was divided among the partners without providing for

the above items. Showing your working clearly, pass an adjustment entry to rectify the above error.

Q5. A, B and C were partners in a firm having capitals of Rs. 50,000; Rs.50,000 and Rs. 1,00,000 respectively. Their current account balances were A: Rs. 10,000; B: Rs. 5,000 and C: Rs. 2,000 (Dr.). According to the Partnership deed the partners were entitled to an interest on capital @ 10% p.a.

C being the working partner was also entitled to a salary of Rs. 12,000 p.a. The profits were to be shared as:

i. The first Rs. 20,000 in the proportion to their capitals.

ii. Next Rs. 30,000 in the ratio of 5:3:2.

iii. Remaining profits to be shared equally.

The firm made a profit of Rs. 1,72,000 before charging any of the above items. Prepare the Profits and Loss Appropriation Account and pass the necessary Journal entry for the appropriation of profits.

Q6. The partners of a firm distributed the profits for the year ended 31st march, 2017, Rs. 90,000 in the ratio of 3:2:1 without providing for the following adjustments -

A and B were entitled to a salary of Rs. 1,500 each pa.

B was entitled to a commission of Rs. 4,500.

iii. Band C guaranteed a minimum profit of Rs. 35,000 p.a. to A.

iv. Profits were to be shared in the ratio of 3:3:2.

Pass the necessary journal for the above adjustments in the books of the firm.

Q 7. Capital Accounts of A and B stood at Rs. 4,00,000 and Rs. 3,00,000 respectively after necessary adjustments in respect of the drawings and the net profit for the year ended 31st March, 2019. It was subsequently noticed that 5% p.a. interest on capital and also drawings were not taken into account in arriving at the distributable profit. The drawings of the partners had been: A Rs. 12,000 drawn at the end of each quarter and B-Rs. 18,000 drawn at the end of each half year. The profit for the year as adjusted amounted to Rs. 2,00,000. The partners share profits in the ratio of 3:2. You are required to pass Journal entries and show Adjusted Capital Accounts of the partners.

Q8. From the following particulars, calculate value of goodwill of a firm by applying Capitalisation of Average Profit Method:

1. Profits of last five consecutive years ending 31st March are:

2021Rs. 54,000; 2020 Rs. 42,000; 2019 Rs. 39,000, 2018 Rs. 67,000 and 2017- Rs. 59,000.

ii Capitalisation rate 20%

Net assets of the firm Rs. 2,00,000,

Q9. X and Y are partners sharing profits in the ratio of 3:2. They decided to admit Z as a partner from 1st April, 2021 on the following terms:

L Z will be given 2/5th share of the profit.

ii Goodwill of the firm will be valued at two years' purchase of three years'...

Q10. From the following particulars, calculate value of goodwill of a firm by applying Capitalisation of Average Profit Method:

1. Profits of last five consecutive years ending 31st March are:

2021Rs. 54,000; 2020 Rs. 42,000; 2019 Rs. 39,000, 2018 Rs. 67,000 and 2017- Rs. 59,000.

ii Capitalisation rate 20%

Net assets of the firm Rs. 2,00,000,

Q11. X and Y are partners sharing profits in the ratio of 3:2. They decided to admit Z as a partner from 1st April, 2021 on the following terms:

 Z will be given 2/5th share of the profit.

ii Goodwill of the firm will be valued at two years' purchase of three years' normal average profit of the firm.

Profits of the previous three years ended 31st March, were

2021-Profit Rs. 30,000 (after debiting loss of stock by fire Rs. 40,000)

2020-Loss Rs. 80,000 (includes voluntary retirement compensation paid Rs. 1,10,000.

2019-Profit Rs. 1,10,000 (including a gain (profit) of Rs. 30,000 on the sale of fixed assets). Calculate the value of goodwill.

Q12. A business has earned average profit of Rs. 8,00,000 during the last few years and the normal rate of return in similar business is 10%. Find value of goodwill by:

1. Capitalisation of Super Profit Method; and

il. Super Profit method if the goodwill is valued at 3 years' purchase of super profit. Assets of the business were Rs. 80,00,000 and its external liabilities Rs. 14,40,000.

Q13. On 1st April, 2020 an existing firm had assets of Rs. 75,000 including cash of Rs. 5,000. Its creditors amounted to Rs. 5,000 on that date. The firm had a Reserve of Rs. 10,000 while Partners' Capital Accounts showed a balance of Rs. 60,000. If Normal Rate of Return is 20% and goodwill of the firm is valued at Rs. 24,000 at four year's purchase of super profit, find average profit per year of the existing firm.

Business studies

Q1.XYZ Corp, a consumer electronics company, plans to expand its market. However, due to a recent economic recession, consumer spending has significantly decreased. XYZ Corp must adjust its strategies to cope with the changing environment. Which dimension of business environment is highlighted here.
Q2. Identify the dimensions of business environment highlighted below
1. With the election of a new government the sensex drops by 748 points.
2.A particular channel refrains from showing the advertisement of a particular product as it is banned by the government.
3. A software is in high demand among the industrial buyers as it can connect all the branches of a company as a single integrated unit.
4. At the time of holi a large number of manufacturing firms get involved in making colours which are used in the celebration of this colourful festival.
5. It is not advisable to open a luxury car showroom in the middle of an economy where per capita income is very low.

Q3. Arman Ltd. Decided to start its new venture in Delhi. For this they needed to understand the Business Environment of the area. It was realised by the Company that the Business Environment of Delhi was very hard to understand   unless and until it was divided into different business dimensions like legal, political, economic, social and technological conditions. After understanding the business situations the company started to study the close links

between different elements of the Business Environment. They gave a proper shape to their research and the business got started with full force. Later they realised that the products they were selling in Delhi were more fit for the European culture and decided to start a new branch in Belgium where the demand of their products was very high from the first day. The company came to be recognized and in few years became a global brand. The reason for its success in different countries was the adaptability' it showed in meeting the changing environment. The company kept track of all happenings and did a periodic survey of the choices of the customers. It recognized that there was no surety in the nature of market and it was very unpredictable. Which features of Business Environment have been highlighted in the above case? Identify the lines which highlight these features.

Q4.A company is a component of market. It utilises various raw materials, labour force, human resources, power, water, other sources, etc. When all these resources are utilized output is produced. But before output is produced the input has to go through various operations. These operations convert the raw materials into final products which are then sold in the market.

In the above paragraph which importance of Business Environment is highlighted?

Q5 ABC Ltd. Set a goal to increase its market share by 15% within one year. The management team is divided on how to achieve this target. Discuss the role of different levels of management in implementing this iplan.

Q6. A retail company, PQR Stores, is experiencing issues between its purchasing, inventory, and sales departments, leading to stockouts and overstock situation. Which concept of management should be used to resolve chaos among these departments? Which importance of coordination is highlighted here.

Q7. XYZ Ltd. Is a management oriented company. Time and again all the employees learn from their seniors various ways of dealing with diverse situations. They are provided training whenever required. They are also given incentives both financial as well as non financial. The result is employees see their development in the organisation. The organisation tries to behave as a responsible constituent of society and ahvays creates good quality products. It has a very good image in the market. The training modules are superb and the employees always try to find unique ways of providing solutions in the context of rapidly changing business environment. This has helped the organisation to adjust frequently in a very good manner. Which Q9. Gold Land Pvt. Ltd. Is a wheat producing company. Daily 5000 bags of wheat weighing 10 kg each are produced here. In comparison to the previous year this ere has been less number of bags produced on a per day basis. The number is around 4500 which is less than the target of 5000 set by the company. The company however has been able to reduce the costs involved in comparison to last year's spending on the production and packaging of each bag. The quality of bags has also been up to the mark.

Identify the concept of management ignored here.

Q8. Clean Sanity ware is a big company. Managing many employees at the same moment is a challenge which this company always faces. Since the company has many departments it is necessary for the company to ensure unity of action among various departments. The various departments are human resources, marketing, finance, operations and sales. The employees are always concerned about the company and are a useful resource to their organisation. Though they have diverse interests and have to perform different activities the management ensures that the efforts of anybody nor get help from anybody. Last year, Mr.Shivam was appointed as Chief Manager of the company. He was an MBA from IMM Ahmedabad and also seven-year experience of the same post. Immediately after taking charge he decided to deal with both the problems of the company. He convened a meeting of all the employees and said, "All the employees are free to give their suggestions. Besides, the one who gives the best suggestion will be awarded a prize. In addition, he advised them to discard ego and extend help in each other's work. We will have to give it the shape of a movement. Those who participate in this movement will be promoted at the Earliest." Shivam proved to be a good leader.

Identify and explain the principles of management by quoting the lines from the above paragraph.

Q9. New Delhi Ltd. is a famous services providing company. Mr. Aman Malhotra is its Managing Director. He continuously motivates his Research and Development department that new and Latest methods of doing work be explored. The provisions has also been made to give reward to Those employees who will participate in a particular exploration. He also believes that two groups working on managerial and non-managerial posts are similar to two wheels of an organisational vehicle. If this vehicle (organisation) is to be driven in a right way then both the wheels

should be property aligned. Mr.Aman is a successful leader. Among his employees, he has instilled the feeling that no decision will be taken without consulting the subordinates. To excel in this field, is The main motive of Mr.Amanand he paid lot of attention to training of employees Identify the principles of scientific management discussed above by quoting the lines.

Q10. The plant superintendent of a company is very sad. When he was on leave he was expecting his subordinates to take the remaining work to the finish. However he finds a new way of dealing with this problem. He develops a system of suggestion building from the side of workers. For this a suggestion/complain box is to be kept where the workers can drop their advice and hence take steps from their side. Which principle of management has been implemented here off late by the plant superintendent?

HISTORY:

1. Analyze and interpret the meaning of three unseen passages each from the following chapters of history text book:-
(A) Harappan Civilization.
(B) Kings, farmers and towns.
(C) Thinkers, beliefs and buildings.
NOTE: Write the question answer related with the passage in your school note book.
2. Locate and label the sixteen Mahajanapadas with their capitals and paste them in the school note book.
3. Create a written debate between a Buddhist monk and a Vedic priest on rituals and the path to salvation.
4. Make a Timeline Chart: Major Rulers of the Mauryan Empire.
5. Create a flowchart: Urban Planning in the Harappan Civilization. Show key features: drainage → street layout → hous design → granaries → public baths.

POLITICAL SCIENCE:

1. Analyze and interpret the meaning of cartoons/pictures displayed in the following chapters of
Political Science text book:-
(A) The end of bipolarity.
(B) Contemporary Centres of Powers
(C) Contemporary South Asia.
(D) International organizations
NOTE: Write the question answer related with the cartoons/pictures in your school note book.
2. ACTIVITY:-
(A) Select any five cold war allies each of the Soviet Union and the U.S. Collect information on the political, social and economic profile of these countries during the cold war days and pen them down in your school note book.
(B) "Reforming the UN means restructuring of the Security Council". Do you agree with this statement? Write arguments for or against this position.
(C) Make a chart of elections and governments in India since 1952. The chart could have the following columns: year of election, name of the winning party, name of ruling party or parties, name of the Prime Ministers.
(D) Create a flowchart on United nations organisation. Show key features: Structure, key functions, Headquarters of the important agencies etc.

हिन्दुस्तानी संगीत गायन (034)

1. तानपुरे का चित्र नाम सहित लिखिए ।

2. धमार ताल का परिचय (ठाह,दुगुन,तिगुन,चौगुन) सहित लिखिए।

3. वर्तमान ख्याल गायक जिसे आप सभी सुनना पसंद करते है उनकी शैली का आलोचनात्मक विश्लेषण कीजिए ।

4. बड़े गुलाम अली खां का भारतीय संगीत में क्या योगदान हैं लिखिए।

PHYSICAL EDUCATION

Q-1 Explain the role of Yoga in Sports.

Q- 2 Write any five Specific exercise of your Game.

Project work - Make a project file using punch sheet of the following topic

Practical –1 Anyone game of your choice out of the list above. Labelled diagram of field & equipment . Also mention its Rules, Terminologies & Skills Volleyball, Football, Kabaddi, Badminton, Basketball, Cricket.

ENGLISH CORE –(301)

1. Anita/Amit of Civil lines ,kanpur, decides to apply for the job of a Sales Manager in a reputed export house. Write and application along with your resume in about 120- 150 words to the Personal Manager, Dezine Furniture Exports, Kanpur.

2. Fast paced life,changing work culture and family structure have left the elderly very vulnerable, neglected,lonely and distressed. Write an article in about 120-150 words describing the problem and suggesting old age homes as a solution to it.You are Prateek/Prateeka.

3. Recently your school organised "The Toppers Day" to honour the meritorious students and the students who excelled in sports and other co-curricular activities. Write a report of the event for your school magazine in about 150 words.

4. Your school is going to organise a Blood Donation Camp . As a Head boy/girl of your school write a notice about the same.

5. Briefly describe the incident in which Douglas was ducked into the swimming pool. How did it affect him?

6. "I screamed but only the water heard me." Why did Douglas scream ?What does he mean by "but only the water hear me"?

7. Lost childhood means lost hopes, lost dreams a lost generation and the beginning of a poor society. Do you agree? Give reasons and support of your answer.

8. Edla symbolises the values of kindness and compassion what values are symbolised by the parallel the cropton and the iron master respectively support your answer with evidence from the story.

9. The bangle makers are embroidered in an endless spiral. What is this spiral ? Why is it endless?

10. What values of Douglas help them overcome his fear of water? Do you think the same values can help you manage your own fears ,if any ?Why/Why not.

11. Make a project file on the poem of "Aunt Jennifer 's Tiger ".

I.P.

1. Write any ten program of python series and dataframe.
2. Write about any twenty stream of computer science in which humans are doing their job with their salary.
3. Write any ten functions of python program and describe their uses.
4. Write the uses of brackets in python program.
5. Write about different types of SQL functions in detail.