BCM SCHOOL

Chandigarh Road, Ludhiana
Summer Holidays Homework (2019-20)
Class XII- Commerce

ENGLISH

1. **Ronit Narang has been selected to play in cricket matches as a member of the famous Kolkata Knight Riders. To celebrate his selection, his parents Sudhir and Sunita Narang want to give a party for him at the Park Hotel, Ranchi. Write an invitation to Ronit's friend Misha/Manas Arora inviting him/her for the same.**

2. **You are the Principal of St. Mary's School, New Delhi. You wish to invite the Joint Commissioner of Police (Traffic) to hold a demonstration for the observance of ' Safety Week' at your school. Draft a formal invitation for the same.**

3. **Nowadays, people have become so busy with their own lives that they have forgotten the little pleasures of life. We have forgotten how to enjoy quiet walks or sit with a cup of tea or coffee and just enjoy the scenery. Write a speech reminding your friends about the simple pleasures of life that are taken for granted. You are Meera/Mohit Kapoor.**

4. **'Private cars should be banned in the congested commercial areas of the cities.' Write a debate in about 150-200 words either for or against the motion.**

5. **MMD School, Nashik, recently organized a science symposium on the topic: 'Effect of Pollution on Quality Of Life'. Write a report on the event for your school magazine in about 120-150 words.**

   Holidays home work must be done in English Classwork Notebook.

Accountancy

Project 1:

Mr. Kanha had 1000 shares of ICICI Limited of ₹ 100 each in March 2014, he sold his share @ ₹ 980 each. With this amount, he decided to set up a business of Kid garments on 1stApril 2014 under the name of
M/s Alpana Kids Garments. He decided that all transaction should be made through bank and deposited the whole money in Dena Bank. He purchased a running factory of kid garments consisting of factory land and building 4,00,000, plant and machinery 3,50,000, furniture 50,000, stock 90,000 but agreed to pay 9,50,000 as purchase consideration. He later approached his banker for a loan to meet the working capital requirements. Bank advanced loan amounting to 4,00,000 @ 10% per annum. He purchased a laptop
for 30,000. His transaction for the year ended 31st March 2015 were as follows:

Total purchase (8,30,000 in credit)	12,40,000
Total sales (15,25,000 in credit)	20,50,000
Wages	2,30,000
Carriage inward	20,500
Power and lighting	15,500
Salary of office and manager	1,25,000
Postage and call	4,200
Printing and stationery	3,800
Advertisements	16,700
Insurance premium	12,100
Conveyance	13,200
Cash received from debtors	12,10,000
10% Fixed deposits in dinner Bank	5,00,000
Paid to creditors	6,50,000
Bill received from debtors	1,00,000
Bill accepted in favour of creditors	80,000
Drawings during the year at the rate ₹ 5,000 per month	60,000

You are required to:
Journalise these transactions and post them into ledger accounts and prepare a Trial Balance.

Prepare Trading and Profit and loss account for the year ended 31st March 2015 and Balance Sheet as at that date after considering the following adjustments:

Adjustments:

Closing stock ₹ 1,10,000. Depreciate land and building by 5%, Plant and machinery and furniture by 10% and computer by 25%.

Salary outstanding ₹ 8, 000 and wages outstanding ₹ 15,000.

Insurance premium prepaid ₹ 1,200.

Accrued interest ₹ 25,000

Comment on the profitability and short term solvency of the firm when similar firms earn gross profits@ 20% and net profit of 10%.

Also compute interest coverage ratio to see whether the firm can meet its interest burden regularly in future.

In future M/s Alpana kids garments would be in need of more funds for expension purpose. For this they are planning to approach the bank for further loan. Suggest on the basis of the ratios calculated above, whether bank can grant more loan to this firm?

Project 2:

Mr Tushar decided to start a computer business. For this purpose he built the first floor of his house at a cost of ₹ 2,00,000 and invested a further sum of ₹ 3,50,000 in this in this business. He wanted to start with 12 computers costing ₹ 40,000 each. He approached ICICI bank and secured loan to the extent of 75% of the cost of computers. It was agreed that loan will be repaid in 4 annual instalments as follows:

At the end of the first year   : (90,000 + 36,000 for interest)

At the end of the second year   : (90,000 + 27,000 for interest)

At the end of the third year   : (90,000 + 18,000 for interest)

At the end of the fourth year   : (90,000 + 9,000 for interest)

He started business on 1st April 2017. On the same date he deposited ₹ 3,30,000 in the bank. He purchased computers and paid 25% of the value of computers from his bank and ₹ 3,60,000 out of bank loan availed. He deposited ₹ 10,000 for the the electric connection with the electricity board and also deposited ₹ 1,50,000 with the VSNL for Internet and telephone connection.

He spent ₹ 40,000 getting the computer Café furnished and also spend ₹ 6,000 in getting the pamphlets printed and distributed.

All payments were to be made by cheque and all the receipts were to be deposited into bank on the same day.

At the end of the year, the results were:

Purchase of computer stationery in like floppy discs, cds extra	₹ 92,000
Revenue from fees received from students of computer classes	₹ ,70,000
Revenue on account of internet facility	₹ ,20,000
Revenue from sale of computer stationery	₹ ,60,000
wages paid to servants	₹ 12,000
electricity charges	₹ 48,000
telephone charges	₹ 73,000
entertainment expenses	₹ 7,000
general expenses	₹ 5,200

He withdrew ₹ 5,000 by cheque and each month for his personal expenses and duly paid the bank loan.

You are required to :

Journalise the above transactions, post them into ledger and prepare a trial balance.

Prepare Trading and Profit and loss account and Balance Sheet taking into consideration that telephone bill of ₹ 6,800 is yet to be paid.

Depreciate building by 5%, furniture by 20% and computer by 30%Calculate profitability ratios and comment on the efficiency of the business if the norms set for gross profit ratio and net profit ratio in similar type of business enterprises are 60% and 25% respectively.

Mr Tushar wants to expand his business. He approached the bank for further loan.

Compute the ratios that the bank manager will take into consideration before granting the loan (Current ratio quick ratio and debt equity ratio).

After the graduation, Mollie started a business of footwear named "Style wear". Her father gave ₹ 760000 as capital in gift. She also took a loan of ₹400000 on 1st April 2014 from Axis Bank at an interest rate of 10% per annum. She purchased a shop for ₹ 330000 in a shopping mall and started her business from 1st April 2014. She deposited ₹ 5000 for electricity connection with TPDDL Ltd. And ₹ 10,000 as a security for the shop in the mall. On the same date, she made some purchases as follows:

 Furniture ₹ 80000 (by cash)
 Goods (footwear) ₹ 120000 (by cash)

On 1st May 2014 she transferred the savings account balance of ₹ 120000 into current account in the name of "Style wear" and treated this amount as an additional capital. On the same date, she also appointed Raju and Rahim as salesman at the salary of ₹ 8000 per month each. She paid ₹ 22000 on 1st May to Mahima interiors for furnishing her showroom. All the payments were made by cheque, except wages, freight and cartage. All the receipts were in cash and were deposited into bank on the same day.

The summary of transactions which took place during the year are as follow:

 Cash sales   ₹ 15,70,000
Credit sales ₹ 3,30,000
Cash purchase ₹ 7,10,000
Credit purchase ₹ 60,000
Wages paid ₹ 15,000
Electricity expenses paid ₹ 70,000
Telephone expenses ₹ 55,000
Freight and cartage ₹ 22,000
Advertisement expenses ₹ 30,000
Miscellaneous expenses ₹ 11,000
Telephone expenses outstanding ₹ 1,000
Electricity expenses due but not paid ₹ 13,000

She withdrew ₹ 5000 per month by cheque for her personal. Depreciation was charged @ 5% per annum on shop and 10% per annum on furniture. Closing stock was valued at ₹ 175000.

You are required to journalize the above transactions. Post them into ledger and prepare a trial balance as at 31st March 2015.

 Prepare trading and profit and loss account for the year ended 31st March 2015 and Balance Sheet as at 31st March 2015.

Calculate profitability ratios (Gross profit ratio, Net profit ratio and Return on capital employed) to assess the profitability of the firm.

Determine the short term and long term solvency position of the firm with the help of the following ratios: current ratio, quick Ratio, debt equity ratio, proprietary ratio.

Project 4:

On Feb06, 2013 Mr Shrinivas wanted to starts a business. So he decided to start a business on Agro seeds. He decided to move on with agro seeds as he had an 8 years experience in private agro seeds business firm. He resisted to mention the firm name.

He decided to invest ₹ 10,00,000. He got the amount from different sources. He first received ₹ 3,00,000 from his father Mr Kanisk from his savings on 27th Feb, 2013. He applied for a bank loan on February 10 2013 and submitted the necessary documents to State Bank of India. He got an amount of ₹ 2,50,000 from his fixed deposit on March 1st, 2013.

He opened a bank account in State Bank of India with the name of "Golden agro seeds". He deposited an   amount of ₹5,00,000 and kept the other ₹ 50,000 as cash in hands on March 2nd 2013. On March 11, 2013 the bank loan was sanctioned and an amount of ₹ 3,50,000 was transfer to his account .he borrowed ₹ 73,000 from Mr Jayaprakash on March 15, 2013 by promising him to pay an amount of ₹ 7300 for 10 months and an interest of 1% per month for the total principal amount. He took a small loan for the remaining capital of ₹ 27,000 from Mr Ritesh on March 16, 2013, it was interest free and he had to pay it within December 15, 2013 that is he had to pay ₹ 3,000 every month. Mr K Srinivas withdrew ₹ 50,000 from the bank account on March 17, 2013. On March 17, 2013 he has

₹ 2,00,000 as cash in hand and 8 lakh in his bank accounts. On March 25th 2013 he rented furnished shop by paying an advance of ₹ 1,00,000 through the bank account by cheque and he had to pay a rent of ₹ 20,000 every month. He had no employees since it was a small store and he is capable of managing alone. On April 1st, 2013 "Golden agro seeds: was started.

At the end of the year the following transactions was recorded excluding transaction made before the business started .

	₹
Purchase (credit purchase being ₹ 4,00,000)	8,00,000
Sales (credit sale being ₹ 2,00,000)	10,00,000
Rent	2,40,000
Insurance expenses	12,000
Travelling expenses	10,000
Electricity expenses	15,000
Disinfectant expenses	20,000
Wages	8,000
Service and maintenance	6,000
Shop modification	3,000
Drawings	24,000
Interest paid to Jayaprakash	8,760
Interest paid to bank	42,000
Principal paid on bank loan	35,000

On May 01, 2013 Mr K Shrinivas brought a laptop of ₹ 29,000 by paying cash.
On September 8, 2013, he brought a printer worth ₹ 8000 through cash. You are supposed to depreciation on laptop at 10% per annum and 8% on printer.

You are required to prepare the following journal, Ledger accounts, Trial balance, Trading and profit and loss account and Balance sheet

Ratio Analysis. Comment on ratios analysis with contrast to industry standards.

Business Studies

Q1. Tarun is appointed as a manager of a multinational company. He is assigned the task of completing 12,000 units per month. Tarun achieved the target but at a higher cost.

   Is the work of Tarun efficient or effective? Give reason?

Q2. Management system can be adopted and used in various non- profit making concerns likeeducational institutions, hospitals, clubs and societies. Which feature of management represent through this? Explain that feature?

Q3. Management is a process consisting of number of functions like planning, organizing,staffing , controlling and directing. It represents which feature of management? Explain that feature?

Q4. Bharti Airtel support local schools with logistical and financial support, capacity building of teachers and infrastructure development. Which business objective is satisfied through this function?

Q5. Hindustan entertainment company is organizing circus shows internationally for the last thirty years. Their shows have been successful across the globe. Of late , their shows are not as popular as they were in the past. They are thinking of bringing in necessary changes in their shows to gain popularity. Identify which characteristics of management they reflect in their business management. Give reasons?

Q6. Sumit has completed his MBA from IIM – Bombay. He joined his family business. During one of the meeting, he started referring to management books and theories to handle customers and manage competitors. On this, his father commented, Books give overview but it is the experience and skills which comes handy while managing customers and preparing strategies to have an edge over competitors. State and explain the nature of management that has been explained in this para.

Q7. In Uflex ltd , the purchase department purchased 200 tonnes of flex sheet for production of flex hoarding ignoring the requisition of 150 tonnes placed by production department. As a result, there was overproduction of flex hoardings. The extra hoardings were not accepted by sales department, consequently extra hoardings remained unsold. On the basis of the given information about Uflex ltd. Answer the following questions:

Identify the aspect of management which is lacking in above situation?

Explain the situations when need for this aspect of management arise?

Q8. Kitchen king enterprises are producers of hand operated grinders. Now with a lot of women in the society going in for jobs there is a greater demand for a product which is more efficient and works at a great speed. On

realising this change, the company decided to enter into the market for producing electronically operated mixers and grinders and food processors.

Which level of management will take this decision? Explain its two functions also?

Q9 Management of Global Ltd. Fulfills all its objectives and the organization is able to work effectively and efficiently . it is using environment friendly methods of production and disposes off the waste material by either recycling it or using the same for landfill in such a manner that the aquatic life is not disturbed . It also provides employment opportunities to the disadvantaged sections of the society.

Identify the objective of management which Global Ltd. wants to fulfill by doing the above activities. State any two other objectives that the management of Global Ltd. should fulfill. Identify any two values which management of Global ltd. can communicate through fulfilling the objectives as stated in part (b). Identify any two values which Global Ltd. Desires to emphasise through its above stated activities.

Q10. Identify the functions of management in the following:
 (a) Short listing, interviewing and selecting people to perform specific tasks in the organization.
 (b) Giving instructions, leading and motivating employees to accomplish desired goals.
 (c) Arranging physical and human resources , assigning responsibilities and authorities for effective implementation of plans.
 (d) Establishing business objectives, setting targets, drafting policies and plans to achieve
 the set goals
 (e) Comparing the actual results with plans and taking corrective actions if any deviation

Q11. Production manager complains that whole production is not sold in time and there is a problem of storing the finished goods. Marketing manager complains that finance department is not allowing it to clear the stocks at a discount since there will be a revenue loss. As a student of management what type of problem you think the business is suffering from? Name the concept? Define it? Explain its three features also?

Q12. Hema is one of the most successful managers of her company, Kobe ltd. She uses her creativity and initiative in handling challenging situations at work. The knowledge gained by her during her student days at a renowned management institute as well as through her observation and experience over the years is applied by Hema in a skillful manner in the context of the realities of a given situation. She often reads books and other literature in various fields of management to keep her knowledge updated.

(a) An aspect of the nature of management is being highlighted in the above description.

Identify the aspect.

(b) Explain any three features of the aspect identified in part(a)

Q13. Rajveer works as a plant superintendent in a carpet making factory. In order to complete the export orders on time, the production manager asks him to make the workers work over time whereas the finance manager is strictly against this practice because it will increase the cost of production. Moreover, Rajveer feels that since the company is manufacturing handmade carpets as well as machine made carpets there is a lot of overlapping of activities. Therefore, there should be two separate divisions for both of them wherein each division should have its own in charge, plans and execution

resources. In context of the above case:

(a) Identify and explain the principle of management which is being violated.

(b) Also identify the principle of management that Rajveer feels should be implemented in the factory.

(c) Give any two differences between the principle of management as identified in part(a) and part(b).

Q14. Neeraj is selected for the post of software developer in an IT company. On the first day of his joining Mehul, his project manager tells Neeraj that during the course of his work he will come across many such opportunities which may tempt him to misuse his powers for individual or family's benefit at the cost of larger general interest of the company. In such situations, he should rather exhibit exemplary behaviour as it will raise his stature in the eyes of the company. Also, for interacting with anyone in the

company on official matters, he should adopt the formal chain of authority and communication.

In context of the above case:

Identify and explain the various principles of management that Mehul is advising Neeraj to follow while doing his job.

Q15. Distinguish between Taylor and Fayol on the basis of personality.

Q16. In a manufacturing company as many as 100 labourers are working in the production department. Eight specialists have been appointed to look after their work to issue command to them and to listen to their complaints. They give advice to the labourers on different issues relating to their work. What technique of scientific management is being followed here? Explain that technique? Which principle of management is being ignored in this case? Explain the violating effects of this principle?

Q17. Mr. Sumsham is the CEO of perfect shoes limited . Before joining this company, he used to work as management expert. The peculiarity of Mr. Khan is that he observes very minutely every small or big activity.

Likewise, he gives equal importance to what is said by every junior or senior person. He is not satisfied with the performance of the production department. This department discharges the functions of both production and stock. Both the activities of the department are in a state of chaos. Mr. Khan took personal interest to scrutinize this dismal state of affair. He found that shoes of several

sizes were being made. Some of the sizes were not needed. As a consequence, there was wastage of material, machines and manpower. It was the biggest weakness of the department. During the survey of production department, Mr. Khan also noticed that many persons while doing work were making certain movements that were least needed. It slowed down the pace of production. Mr. Khan was an experienced management expert. He knows that to utilize cent- percent production capacity of the employees they need be provided healthy and clean environment. He therefore, paid special attention to this aspect. Besides, he believes that whether male or female, they must be given equal facilities, equal rights and equal opportunities for promotion. By which technique of scientific management wastages occurring in production department can be

prevented. Explain?

Highlight the technique of scientific management used to enhance the pace of work in production department. Explain?

Which principle of management is being followed here? Quote the lines.

Q18. The principles of management are not rigid prescriptions, what does this highlight about nature of principles of management?

Q19. In one of the principles of scientific management, Taylor emphasizes that there should be equal division of work and responsibility between workers and management should work almost side by side with workers helping and smoothing the way for them. Identify that principle and explain it?

Q20. Define business environment?

Q21.Inflation rate is included in which type of environment?
>   (a) Economic environment   (b) legal environment
>   (c) Political environment   (d) social environment

Q22. Which component of general environment of business prohibits the advertisement of alcoholic beverages?
>   (a) Economic environment   (b) legal environment
>   (c) Social environment   (d) political environment

Q23. What do you mean by opportunities?

Q24. What do you mean by threats?

Q25. Life expectancy is a component of which type of environment?

Q26. Govt. passed consumer Protection Act, 1986. It will be included in which type of environment?
>   (a) Political environment   (b) legal environment
>   (c) Social environment   (d) technological environment

Q27 Accent electronics ltd. was operating its business in Malaysia. The company started exporting its products to India when the Prime Minister announced relaxation in import duties on electronic items. The company appointed retailers in India who had direct online links with the suppliers to replenish stocks when needed.

Identify and explain the dimension of business environment discussed in the above case?

Q28. The government of India is seriously thinking of allowing the oil marketing public sector undertaking to fix their own prices for petrol and diesel. Which economic reform is the reason for this change in the government policy? Identify and define it?

Q29. Name the framework within which management and operating tasks are performed?

Q30. It arises from a superior – subordinate relationship wherein the subordinate is bound to perform the duty assigned to him by his superior. Identify it?

Q31. Ajanta Foods Ltd. is engaged in the trading of Noodles. It has its registered office in Kolkata , manufacturing unit in Solan and marketing department at Delhi.

Which type of organizational structure the company should adopt to achieve its target?

Q32. Name the type of plan which is used in defence parlance which means to prepare plans considering the plan of adversary?

Q33   Planning is a mental exercise? How?

Q34. Define organizing as a process?

Q35. Rahul, a worker is given a target of assembling two computers per day. Due to his habit of doing things differently, an idea struck him which would not only reduce the assembling time of computers but would also reduce the cost of production of the computers. Rahul's supervisor instead of appreciating him, ordered him to complete the work as per the methods and techniques decided earlier as nothing could be changed at that stage. The above para describes one of the limitations of planning function of management. Name that limitation?

Q36. Optima industries is a company manufacturing spectacle glasses and frames. The company chooses to diversify its operations so as to improve its growth potential and earn more profits. Many alternatives were thought for the purpose and were discussed amongst the members of the organisation. After evaluating the various alternatives Mr. Atul, the managing director of the company decided that they should add office furniture as anew line of business activity. On the basis of the given information about Optima industries, answer the following questions:

(a) Name the framework, which the diversified organisation should adopt, so as to achieve the objectives of growth and higher profits? Give one reason in support of your answer.

(b) State two merits and two limitations of this framework.

Q37. Yummy Corn Flakes Ltd. aims to increase its profits by at least 20% in the next quarter.

It has many options:

To increase the working hours of labourers without making any additional payment.

To employ small children from the local community so as to cut labour costs.

To buy lower quality raw material to bring the input cost down.

It opted the (b) and (c) options to achieve the target. On the basis of the given information about Yummy Corn Flakes Ltd., answer the following questions:

Identify the function of management involved.

State the steps of the functions of management identified in (a). Explainfirst two steps.

Identify the values being ignored by the management of yummy corn flakes.

Q38. A company manufacturing soft drinks was doing good business for many years. It had a dominant position in the market. But over a period of time it's share started declining. This change happened due to economic environmental changes and with the entry of multinational companies in the field of soft drinks. Since its inception the company was following a centralized model. Even the minor decisions were always made by the top level management, the middle level and the lower level managers had no say in decision making. This model served the company well till the year 1991 but now the company was facing pressure due to changes in the business environment. On the basis of the given information, answer the following questions:

Suggest the change that the company should bring about in order to regain its market share. Explain the importance of the concept identified above.

Q39. Sparkle Chemicals Works Ltd. manufactures detergent powder and bathing soaps. The company decides to enter into construction business. The company has a competent top management who know there are various challenges in the new industry in which they are stepping into. Still the top managers don't put in the needed efforts in planning the diversification. Advice the top manager why they should opt the required effort towards planning before taking the decision further?

ECONOMICS:

1) What are the reasons that led to the adoption of new economic policy?

2) what was the principal objective of IPR1956? Did we really achieve it?

3) Was is inward looking trade policy? How relevant it is in the context of growth and development?

4) Describe the recent changes in the direction of India's exports and imports.

5) It is said that New economic policy is liberal. Do you agree? Give arguments in support of your answer.

6) Evaluate the fiscal reforms introduced under the new economic policy.

7) Why was public sector given a leading role in industrial development during the planning period?

8) While subsidies encourage farmers to use new technology, they are a huge burden on government finances. Discuss the usefulness of subsidies in this context.

9) Distinguish between Centrally planned economy and Mixed economy.

10) Explain how import substitution can protect domestic industry.

11) Discuss economic reforms in the light of social justice and welfare.

12) How change in money supply can contribute to stability in the economy?

13) Bring out the differences between central bank and commercial banks on the basis of functions they perform.

14) Using the equation of consumption function C= c+bY, calculate consumption expenditure at the income level of 500 Crores. ,if autonomous consumption is 40 cr. and 40% of additional income is saved.

15) Explain the components of domestic factor income.

16) In the present scenario when the industrial growth is low, do you think a cut in repo rate by the RBI would accelerate the pace of economic growth?

17) State briefly the various instruments of monetary policy.

18) Explain the currency authority function of Central Bank.

19) The consumption function for an economy is C=20+0.8Y.Determine the level of income when APC will be equal to one.

20) Draw a straight line saving curve on a diagram for an economy. From it derive the consumption curve, explaining the method of derivation. Show a point on the consumption curve at which average propensity to consume is equal to 1.

21) PROJECT WORK (As discussed in the class)

Maths

Q.1: Find the value of 'a' for which the function f defined as

$$f(x) = \begin{cases} a \sin\frac{\pi}{2}(x+1) & x \leq 0 \\ \frac{tanx - sinx}{x^3} & x > 0 \end{cases}$$ is continuous at x=0

Q.2: If $x^y + y^x = (x+y)^{x+y}$, find $\frac{dy}{dx}$.

Q.3 : Determine the values of a, b & c for which the function

$$f(x) = \begin{cases} \frac{sin(a+1)x + sinx}{x} & x < 0 \\ c & x = 0 \\ \frac{\sqrt{x+bx^2} - \sqrt{x}}{b\sqrt{x^3}} & x > 0 \end{cases}$$ may be continuous at x=0.

Q.4: Show that the function f(x) = $x^m \sin\left(\frac{1}{x}\right)$, x $\neq$ 0

$$0 \qquad , x = 0$$

is (i) differentiable at x = 0 , if m $>$ 1 (ii) not differentiable at x = 0 , if 0$< m < 1$.

Q.5 : If x = secθ − cosθ and y = sec$^n\theta$- cos$^n\theta$, then show that : $(x^2 + 4) (\frac{dy}{dx})^2 = n^2(y^2 + 4)$.

Q.6 :Show that f(x) = $\frac{\sin 3x}{\tan 2x}$ if x < 0

$\frac{3}{2}$ if x = 0   is continuous at x = 0 .

$\frac{\log(1+3x)}{e^{2x} - 1}$ if x > 0

Q.7 : If y = [log(x + $\sqrt{x^2 + a^2}$)]^2 , show that $(x^2 + a^2) \frac{d^2y}{dx^2} + x\frac{dy}{dx} - 2 = 0$.

Q.8 :If y = $\sin^{-1}\left[x \sqrt{1-x} - \sqrt{x}\sqrt{1-x^2}\right]$ and 0< x < 1 then find $\frac{dy}{dx}$.

Q.9 :Differentiate $\tan^{-1}\frac{\sqrt{1-x^2}}{x}$ with respect to $\cos^{-1}(2x \sqrt{1-x^2})$ where $\frac{1}{\sqrt{2}}$< x < 1 .

Q.10 :If $\sqrt{1-x^2} + \sqrt{1-y^2}$ = a(x − y) , prove that $\frac{dy}{dx} = \sqrt{\frac{1-y^2}{1-x^2}}$.

Q.11 : If x = sin t and y = sin pt , prove that $(1 - x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + p^2y = 0$.

Q.12: Using mean value theorem, prove that there is a point on the curve y = 2x^2 − 5x + 3 between the points A(1 , 0)

and B(2 , 1) where tangent is parallel to chord AB. Also find that point .

Q.13:Show that the line $\frac{x}{a} + \frac{y}{b}$ = 1 touches the curve y = b $e^{\frac{-x}{a}}$ at the point where the curve intersects the axis of y .

Q.14:Find the angle of intersection of the curves y^2 = x and x^2 = y .

Q.15: Find the intervals in which the function f(x) = sin^{4}x + cos^{4}x , 0$\leq x \leq \frac{\pi}{2}$, is strictly increasing or decreasing .

Q.16: If x = tan ($\frac{1}{a}$ log y) , then show that (1 + x^2)$\frac{d^2y}{dx^2}$ + (2x − a)$\frac{dy}{dx}$ = 0 .

Q.17: If y = $\frac{2}{\sqrt{a^2 - b^2}}$ tan$^{-1}(\sqrt{\frac{a+b}{a-b}}$ tan$\frac{x}{2}$) , prove that $\frac{dy}{dx} = \frac{1}{a-b\, cosx}$, a > b > 0 .

Q.18: Find the equations of the tangent and normal lines to the curve y = t^2 + 4t + 1 and x = t^2 + t + 1 at the point (3, 6) .

Q.19 : Find the equations of the tangent and normal lines to the curve   16 x^2 + 9y^2 = 144 at (x_1 , y_1) where x_1 = 2 and

y_1> 0 . Also find the points of intersection where both tangent and normal cut the x- axis.

Q.20 : Show that the curves x^2+ y^2 = 2a^2 and xy = a^2 touch each other .

Q.21 : If y = x log($\frac{x}{a+bx}$) then show that x^3 $(\frac{d^2y}{dx^2})$ = (x $\frac{dy}{dx}$ - y)^2 .

Q.22 : Find $\frac{d^2y}{dx^2}$ at $\theta = \frac{\pi}{6}$ if x = a cos$^3 \theta$, y = a sin$^3 \theta$.

Physical Education:

Project:

*To be done on coloured A 4 sheets

*Maximum number of pages 15-20

1.(1)Motor fitness test and (2) General motor fitness test

2.Procedure for administering Senior Citizen Fitness test for 5 elderly family members.

Practical File:

*To be done in physical education practical file

1.Athletics- Labelled diagram of 400m Track and Field with computation.

2.Procedure for Asanas, benefits and contraindications for any two asanas for each lifestyle disease.

3.Labelled diagram of field and equipment of Volleyball with all the Rules, Terminologies and Skills of the game.

Psychology

> Revise Chapters 1-4.

- Prepare your own objective-type questions from each chapter, and answer them. (Minimum 25 questions from each chapter)
- Learn all the key terms.
- Write down answers for the review questions given at the end of each chapter.

> Prepare a project file for a case study on any one psychological disorder.

HOME SCIENCE

Q1. Name the ingredients of ORS, recommended by WHO.

Q2. What are the social issues have been focused under DWACRA?

Q3. Which five points you will kept in mind while storing drinking water in the house?

Q4. A family is served a meal consisting of dal, rice, curd and chapattis. Evaluate this meal and suggest modification along with reasons. What additional changes are necessary, if this meal is served to lactating mother and why?

Q5. List the objectives of DWACRA.

Q6. Meal planning is influenced by age and occupation. Support this statement with two examples each.

Q7. Name the diseases caused by impure water. How will you make water potable with the help of alum?

Q8. Explain the principles of meal planning with example

Q9. Giyani, a 16 years old girl, tried to commit suicide due to her failure in board exams for last two years. Recognize the state

of Giyani undergoing. Define it in short and write its five common symptoms.

Q10. Write two disadvantages an adolescent may suffer from if he/she is not a member of any group?

Q11. Within 15 days of getting your juicer-mixer repaired, it stopped working. State the two ways to deal with this problem.

Q12. People suffering from jaundice need to be very careful about their diet. Give four dietary points they should adopt?

Q13. Marsh is a laborer who does hard physical labor for about 12 hours a day. Enumerate four factors that his wife must kept in mind while preparing his lunch.

Q14. Abita is a house wife. She wants to save fuel by meal planning. Suggest her some ways of doing this.

Q15. Plan a day's menu for an adult suffering from diarrhea. Also make a list of practical considerations that you will kept in mind before planning menu.

Q16. Certain chemicals are used for purification of water. Given below are some chemicals which are used for same purpose. Explain them in short.

Chlorine

Bleaching powder

Q17. Economic status has a great effect on cognitive development. Explain the statement in brief.

Q18. Intoxication is a curse that harms the entire prospects of teenagers. Enumerate various ways in which its bad effects are manifested.

Q19. Due to intense work pressure at home and office, working women sometimes suffer from stress that results in Hypertension. Define hypertension. What are its symptoms that can help in diagnosing the problem?

Q20. Name the food products which do not contain sodium.

Q21. Write four social traits which develop in adolescence.

Q22. Games play an important role in cognitive development. How do they inculcate the social values in the adolescents?

Q23. Mr. Sharma lives in a joint family comprising of different individuals. Each member has its own particular nutritional needs according to their age, gender, occupation, health status etc. Explain how their meal planning is affected by it.

Q24. What are the important things you will kept in mind while planning a meal for a pre-scholar?

Q25. Media effects the selection of food in both negative and positive ways. Give examples of adverse effect of media on selection of food.

PROJECT:
- Write a report on the needs and problems of old age.
- Write a report on the needs and problems of adolescents.

FINE ARTS

- ➢ Practical : Compositions sheet -5
- ➢ Landscape sheets - 5
- ➢ Still life copied - 1
- ➢ Decorate your file cover
- ➢ Make headings of still life, landscapes, compositions.
- ➢ Theory: Learn unit-1 and 2.
- ➢ Rajasthani, pahadi, mughal, Deccan school.

Computer Science:

Revision of Ch. 1 to 5, 9 with back exercise and sample question paper given.

IP:
Revise chapter 1 & 2.

Music: Revise whole syllabus done in the class.

HAPPY HOLIDAYS!