

REVISION PAPER XII 2018 (SPECIAL)

1. Why are irredeemable debentures also known as perpetual debentures? (1)
2. Distinguish between shares and debentures on the basis of convertibility? (1)
3. Name the account which is prepared to close the assets and liabilities at the time of dissolution of firm. (1)
4. Anand, Bhasin and Chhadha are partners dealing in sale of gift items. Anand without the knowledge of Bhasin and Chhadha is also running a business of supplying gift items with the help of his wife. He is earning good profit from this business which he did not share with Bhasin and Chhadha. (1)
Was Anand correct in doing so? Indicate the value which he did not follow.
5. Nidhi and Aastha were partners sharing profit in the ratio of 3:2. They admitted Mayank as a new partner for $\frac{3}{10}$ th share which he acquired $\frac{2}{10}$ th from Nidhi and $\frac{1}{10}$ th from Aastha. Calculate the new profit sharing ratio of Nidhi, Aastha and Mayank. (1)
6. Six friends started a partnership business by investing Rs.2,00,000 each they decided to share profits equally name the term by which they will be call them individually and collectively. (1)
7. Lotus Limited has an authorized capital of Rs.30 lakh divided into equity shares of Rs.20 each the company invited applications for issuing 80,000 shares application for 76,000 shares were received. All calls were made and were duly received except the final call of Rs.11 per share on 9000 shares.
(a) These shares were forfeited.
(b) Present the share capital in the balance sheet of the company as per schedule III of companies act 2013 also prepare Notes to accounts for the same. (3)
8. Ekta Ltd issued Rs.50,00,000, 8% debentures of Rs.500 each at par redeemable at a premium of 10% after five year
According to the term of issue Rs.250 was payable on application and balance on the allotment of debentures. Record necessary journal entries at the time of issue of 8% debentures. (3)
9. Radha limited purchased a running business from Krishna traders for a sum of Rs.15,00,000 payable Rs.30,00,000 by cheque and for the balance issued 9% debentures of Rs.10 each at par
The assets and liabilities consisted of following
Plant and machinery Rs.4,00,000; Stock Rs.6,00,000; sundry debtors Rs.3,00,000; building Rs.5,00,000; sundry creditors Rs.2,00,000.
Record necessary journal entries in the books of Radha Ltd. (3)
10. Neeraj and vision are carrying on a business of repairing electronic items. There are no other technicians for repairing electronic items in the locality.
As the electric supply has a lot of fluctuations, the equipment gets damaged. Therefore, both the partners themselves do the repairing work to the satisfaction of the customers. The firm donors 10% of the profit to a charitable Hospital of the locality for medical treatment of persons below power T line. State the two factors affecting the goodwill goodwill of the firm discussed in the above para. Also identify any two values which the firm is trying to propagate. (3)
11. A and B were partners in the firm sharing profits and losses in the ratio of 5: 3. They admitted C as a new partner. A surrenders one third of his share in favour of C and D surrenders one fourth of his share in favour of C. C brought Rs.1 lakh 50,000 for his share in capital and Rs.5,80,000 for his share of goodwill calculate new profit sharing ratio of A, B and C. Also pass necessary journal entries on C's admission. (4)
12. Praveen, Sahil and Riya are partners having fixed capital Rs.2,40,000, Rs.1,60,000 and Rs.1,20,000 respectively. They share profits in the ratio of 3:1:1 the partnership deed provided for the following which were not recorded in the books.

- (a) interest on capital at the rate of 5% per annum.
 (b) Salary to Praveen Rs. 1500 p.m. and to Riya Rs.1000 per month.
 (c) Transfer from profit to general reserve Rs. 10,000.
 Net profit for the year ended 31 March 2017 was Rs.1,00,000. Pass necessary rectifying entries for above. (4)
13. Pass the necessary journal entry for the following transaction on the dissolution of the firm of Ravi and Arun after the various assets (other than cash and a outside liabilities) have been transferred to the realization account
- (a) Bank loan was paid Rs.45,00
 (b) Typewriter not appearing in the books of account now realize Rs.5000.
 (c) Ravi, a partner, paid a creditor Rs. 16,000.
 (d) Expenses to realisation amounted to Rs.4200.
 (e) Furniture worth Rs. 25,700 was taken up by the Arun.
 (f) Loss on the relation Rs.2400 was distributed between Ravi and Arun in 3: 2 ratios.(6)
14. Amar and Parvez where partners in the firm sharing profits in the ratio of 4;3. On 1st April 2016, they admitted Rubina as a new partner for one fourth share in the profit of the firm. On the date of Rubina's admission the balance sheet of Amar Parvez shows general reserve of Rs.1 lakh 40,000, a debit balance of Rs. 21,000 in profit and loss account and workmen compensation fund of Rs. 10,000. The following was agreed upon on Rubina admission
- (a) Rubina will bring Rs.4,00,000 as her capital and Rs. 70,000 as her share of goodwill in cash
 (b) There was a claim of workmen compensation for Rs. 17,000.
 (c) The partners decided to share future profits in the ratio of 2;1;1.
 Pass the necessary ~~Journal~~ entries for the above on Rubina's admission. (6)
15. Record the Journal entries for forfeiture and re-issue in the following cases:
- (a) X Ltd. Forfeited 200 shares of Rs. 100 each, Rs.70 called up. On which the shareholders had paid application and allotment money of Rs. 50 per share. Out of these 150 shares were reissued to Naresh as Rs. 70 paid up for Rs. 80 per share.
 (b) Y Ltd. Forfeited 180 shares of Rs. 10 each; Rs. 8 called up, issued at a premium of Rs. 2 per share to R for non-payment of allotment money of Rs. 5(including premium). Out of these 160 shares were reissued to Samar as Rs. 8 called up for Rs. 10 per share. (6)
16. Pankaj Fab Ltd. Issued 1,00,000 equity share of Rs. 10 each payable as Rs. 2 on application, rupees for rupees on allotment and rupees to each on first and final call. Applications where is see you for one lakh 50,000 shares. Application of 50,000 shares were sent the letter of regret and application money was refunded. Mathur holder of 3000 shares failed to pay the allotment money which he paid along with the first call. Rohan, a shareholder holding 7000 shares pay both the calls along with the allotment. Sohan, a holder of 1000 shares did not pay the first call and the final call. His shares were forfeited. The forfeited shares were reissued at Rs.11 per share as fully paid up. Pass necessary journal entries for the about transactions in the books of the company. (8)

OR

Transactions. Radha Mohan Ltd invited applications for issuing four lakh equity shares of Rs.50 each amount was payable as follows:

On application Rs.15 per share

On allotment Rs.25 per share

On first and final call Rs.10 per share.

Application for 6,00,000 shares were received and pro-rata allotment was made to all the application on the following basis:

Applications for 2,00,000 shares were allotted one lakh shares applicants for four lakh shares were allotted three lakh shares.

It was decided that excess amount received an application will be adjusted towards some due on allotment and surplus, if any, will be refunded. Guneet who was allotted 6000 shares out of the group applying for four lakh shares did not pay the allotment money and his shares were forfeited immediately. Afterward's, this forfeited shares were issued at Rs.30 per share fully paid up. Later on, first and final call was made. Shahid, who had applied for 2000 shares out of bro applying for two lakh shares failed to pay first and final call, and his shares were also forfeited. This shares were afterward's reissued at Rs.60 per share as fully paid up. Pass necessary journal entries in the books of Radha Mohan Ltd for the above transactions.

17. Ram, Mohan and so on were partners, sharing profits and losses in the ratio of 5:3:2. On 31 March 2017 their balance sheet was as follows:

Liabilities	Amount	Assets	Amount
Capital Ram	1,50,000	Leasehold property	125,000
Mohan	1,25,000	Patents	30,000
Sohan	75,000	Machinery	150,000
Workmen compensation fund	30,000	Stock	1,90,000
creditors	1,55,000	Cash at Bank	40,000
	<u>5,35,000</u>		<u>5,35,000</u>

Sohan died on 1st August, 2017 it was agreed that:

- Goodwill of the firm is to be valued at 175,000.
- Machinery be valued at 140,000; patents at Rs. 40,000, leasehold at 150,000 on this date
- for the purpose of calculating so and share in the profit of 2017-18, the profit should be taken to have accrued on the same scale as in 2016-17. which were Rs. 75,000. Prepare Sohan's capital account and revaluation account and capital account of other partners.

OR

Following is the balance sheet of Amar and samar as on 31 March 2017.

Liabilities	Amount	Assets	Amount
Capital A/C		Bank	20,000
Amar	1,10,000	Debtors	44,000
Samar	60,000	Less Provisions	2,000
Creditor	26,000		42,000
Employees provident fund	16,000	Stock	30,000
Workmen Compensation fund	30,000	Plant and Machinery	1,20,000
		Goodwill	20,000
		Profit and Loss A/c.	10,000
	<u>2,42,000</u>		<u>2,42,000</u>

On the above date, Goldy was admitted as a partner for 1/4th share in the profits of the firm with the following terms:

- Rs. 2,500 will be written off as a bad debt.
- Stock was taken over by Samar at Rs. 35,000.
- Goodwill of the firm was valued at Rs. 40,000 Goldy brought his share of goodwill in cash.
- Goldy brought proportionate capital and capital of other partners were adjusted on the basis of Goldy's is capital. For this necessary cash was brought in or paid of to the partners as the case may be. Prepare revaluation account partners capital account and balance sheet of admission.

(8)

PART-B

18. Interest received on debentures would result in inflow, outflow, or no flow of cash. Give your answer with reason. (1)
19. Why is depreciation added back to net profit while preparing cash flow statement? (1)
20. Under which major Saab heading back following items will be shown in the balance sheet of the company as per schedule III of the companies act 2013: (4)
- (i) Loose Tools
 - (ii) Trade Mark
 - (iii) Bank Overdraft
 - (iv) Bonds
 - (v) Debentures
 - (vi) Calls-in-Advance
 - (vii) Subsidy Reserve
 - (viii) Mining Rights.

21. Prepare Comparative Statement of Profit and Loss from the following information's: (4)

Particulars	31 st March, 2017(Rs.)	31 st March, 2016 (Rs.)
Revenue from Operations	12,00,000	8,00,000
Purchase of Stock in Trade	7,80,000	6,20,000
Change in inventories	40,000	80,000
Other Expenses	10%of cost of revenue from operation	8% of cost of revenue from operation
Rate of Tax	30%	40%

22. (a) From the following, Calculate Trade Receivable Turnover Ratio:
Total revenue from operation for the year Rs. 8,40,000. Cash revenue from operations 40% of credit revenue from operation and closing trade receivable is Rs. 2,00,000. Excess of closing trade receivable over opening trade receivable is Rs. 80,000.
- (b) From the following information, calculate 'Interest Coverage Ratio'.
Profit after interest and tax Rs. 4,97,000.
Rate of Income Tax 30%.
12% Debentures Rs. 6,00,000. (4)

23. (a) Calculate 'Cash Flow from Operating Activities' from the following information:

Particulars	31 st March, 2017(Rs.)	31 st March, 2016 (Rs.)
Surplus i.e. Balance in Statement of Profit and Loss	80,000	1,00,000
Trade Receivables	2,50,000	2,40,000
Goodwill	15,000	20,000
Outstanding Expenses	8,000	-----
General Reserve	80,000	50,000
Provision for Depreciation on Plant	1,00,000	82,000
Prepaid Expenses	-----	6,000
Trade Payables	84,000	60,000

- (i) Plant costing Rs. 60,000 having book value of Rs. 36,000 was sold for Rs. 40,000 during the year.
 - (ii) Income tax paid during the year Rs. 30,000.
 - (iii) Dividend paid during the year was Rs. 18,000.
- (b) State any two objectives of preparing Cash Flow Statement. (4+2)

1. What is the no. of atoms ^{XII} per unit cell (z) in a body-centred cubic structure? (1)
2. In reference to surface chemistry, define dialysis. (1)
3. What is the IUPAC name of the complex $[\text{Ni}(\text{NH}_3)_6]\text{Cl}_2$? (1)
4. Draw the structure of 3-methylpentanal.
5. Complete the following reaction equation:-
6. Define osmotic pressure of a solution. How is the osmotic pressure related to the concentration of a solute in a solution? (2)
7. Define the following terms:-
 i) Half-life of a reaction. (ii) Rate constant (2)
8. Draw the structures of the following:-
 i) H_2SO_4 ii) XeF_2 (2)
9. What is meant by 'disproportionation'? Give an example of a disproportionation reaction in aqueous solution (2)
- Suggest reasons for the following features of transition metal chemistry: (OR)
- i) The transition metals and their compounds are usually paramagnetic.
 ii) The transition metals exhibit variable oxidation states.
10. Explain the mechanism of dehydration steps of ethanol:-

$$\text{CH}_3\text{CH}_2\text{OH} \xrightarrow[443\text{K}]{\text{H}^+} \text{CH}_2=\text{CH}_2 + \text{H}_2\text{O}$$
11. Define the following:-
 i) Schottky defect ii) Frenkel defect iii) F-centre
12. 45 g of ethylene glycol ($\text{C}_2\text{H}_4\text{O}_2$) is mixed with 600g of water. Calculate
 i) the freezing point depression and
 ii) the freezing point of the solution.
 (Given: K_f of water = $1.86 \text{ K Kg mol}^{-1}$)
13. The rate constants of a reaction at 500K and 700K are 0.02 s^{-1} and 0.07 s^{-1} respectively. Cal. the value of activation energy, E_a ($R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$)

14. Define the following terms:-

- i) Electrophoresis ii) Adsorption iii) Shape selective catalysis.

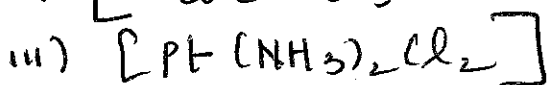
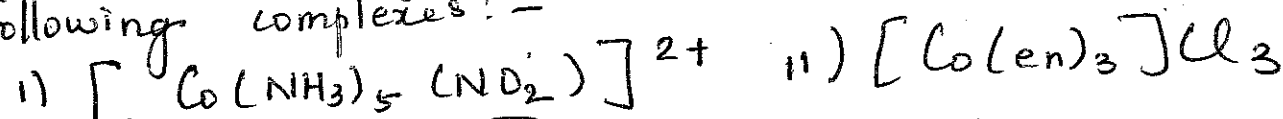
15. Outline the principles of metals by the following methods:-

- i) Distillation ii) Zone refining iii) Electrolysis

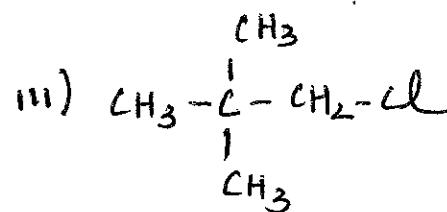
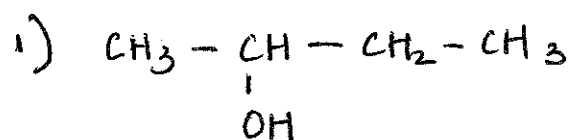
Write down the reactions taking place in different zones in the blast furnace during the extraction of iron. How is pig iron different from cast iron?

16. What is lanthanoid contraction? What are the consequences of lanthanoid contraction?

17. Indicate the types of isomerism exhibited by the following complexes:-



18. Write the IUPAC name:- Br



19. How are the following conversions carried out?

- i) Propene to propan-2-ol. ii) Benzyl chloride to Benzyl alcohol iii) Anisole to p-Bromoanisole

20. An aromatic compound 'A' on treatment with aqueous ammonia and heating forms compound 'B' which on heating with Br_2 and KOH forms a compound 'C' of molecular formula C_6H_7N . Write the structures and IUPAC names of compounds A, B and C.

21. How are vitamins classified? Name the vitamin responsible for the coagulation of blood.

22. Write the names and structures of the monomers of the following polymers:-

- i) Buna-S ii) Neoprene iii) Teflon

23. Ramesh went to a departmental store to purchase groceries. On one of shelves he noticed sugar-free tablets. He decided to buy them for his grandfather.

who was a diabetic. There were three types of sugar-free tablets. Ramesh decided to buy sucrose which was good for his grandfather's health.

- i) Name another sugar free tablet which Ramesh did not buy.
- ii) Was it right to purchase such medicines with doctor's prescription?
- iii) What quality of Ramesh is reflected above?

24) (a) Define the following terms:-

- i) Molar conductivity (Λ_m)
- ii) Secondary batteries
- iii) Fuel cell

(b) State the following laws:-

- i) Faraday first law of electrolysis
- ii) Kohlrausch's law of independent migration of ions

OR

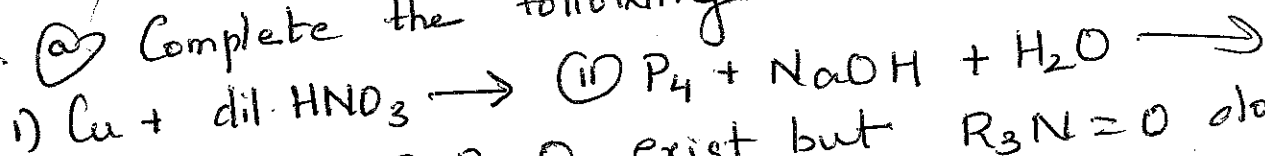
(a) Define the term degree of dissociation. Write an expression that relates the molar conductivity of a weak electrolyte to its degree of dissociation.

(b) For the cell reaction:

$Ni/Ni^{2+} || Ag^+ / Ag$, Cell. the equilibrium constant at $25^\circ C$. How much maximum work would be obtained by operation of this cell?

$E^\circ_{Ni^{2+}/Ni} = 0.25V$ and $E^\circ_{Ag^+/Ag} = 0.80V$

25. (a) Complete the following chemical reaction eqn.



(b) (i) Why does $R_3P=O$ exist but $R_3N=O$ does not? (R = alkyl group)

- ii) Why is dioxygen a gas but sulphur a solid?
- iii) Why are halogens coloured?

OR

(a) Write balanced eqn for the following reactions

- i) Chlorine reacts with dry slaked lime
- ii) Carbon reacts with conc. H_2SO_4

(b) Describe the contact process for the manufacture of sulphuric acid with special reference to the reaction conditions, catalysts used and the yield in the process.

26 (a) Describe the following giving chemical eqⁿ:-
i) De-carboxylation reactⁿ ii) Friedal-Crafts reactⁿ.

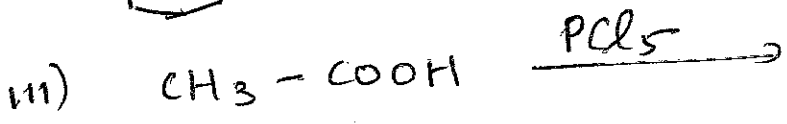
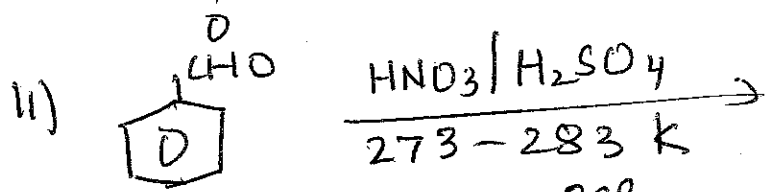
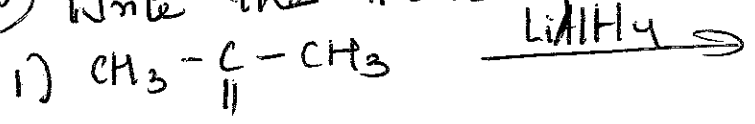
(b) How will you bring about the following conversions

- i) Benzoic acid to Benzaldehyde
 - ii) Benzene to m-Nitroacetophenone
 - iii) Ethanol to 3-Hydroxybutanal
- OR

(a) Describe the following:-

- i) Acetylation ii) Aldol condensation

(b) Write the main product:-



Time : 3 hours

Max. Marks : 100

General Instructions :

- (i) All questions are compulsory
- (ii) Check that this question paper contains 29 questions.
- (iii) Questions 1 to 4 in Section A are Very Short Answer Type Questions carrying one mark each.
- (iv) Questions 5 to 12 in Section B are Short Answer Type Questions carrying 2 marks each.
- (v) Questions 13 to 23 in Section C are Long Answer Type Questions carrying 4 marks each.
- (vi) Questions 24 to 29 in Section D are Long Answer Type Questions carrying 6 marks each.
- (vi) Write down the serial number of the question before attempting it.

SECTION – A

- 1. Write the principal value of $\tan^{-1}(\sqrt{3}) - \cot^{-1}(-\sqrt{3})$.
- 2. If $R = \{(x, y) : x + 2y = 8\}$ is a relation on N , write the range of R .
- 3. Write a square matrix of order 2, which is both symmetric and skew symmetric.
- 4. . In a triangle OAC , if B is the mid-point of side AC and $\overrightarrow{OA} = \vec{a}, \overrightarrow{OB} = \vec{b}$, then what is \overrightarrow{OC} ?

SECTION – B

- 5. If $f(x) = x + 7$ and $g(x) = x - 7, x \in R$, find $(f \circ g)(7)$
- 6. Let $*$ be binary operation on Q defined by $a * b = \frac{3ab}{5}$. Show that $*$ is commutative as well as associative.
- 7. If $A = \begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$, then for any natural number n , find the value of $\text{Det}(A^n)$.
- 8. Evaluate : $\int \frac{1}{\cos^2 x \sin^2 x} dx$
- 9. Evaluate : $\int_0^{\pi/2} \frac{\cos^2 x dx}{1+3 \sin^2 x}$.
- 10. Find a vector of magnitude $\sqrt{171}$, which is perpendicular to both of the vectors $\vec{a} = \hat{i} + 2\hat{j} - 3\hat{k}$ and $\vec{b} = 3\hat{i} - \hat{j} + 2\hat{k}$.

11. Find the angle between the lines $2x = 3y = -z$ and $6x = -y = -4z$.

12. Find the angle θ , between the line $\frac{x-2}{3} = \frac{y-3}{5} = \frac{z-4}{4}$ and the plane $2x - 2y + z - 5 = 0$.

SECTION – C

13. Prove that : $\tan^{-1}\left(\frac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}}\right) = \frac{\pi}{4} - \frac{1}{2} \cos^{-1} x, -\frac{1}{\sqrt{2}} \leq x \leq 1$.

OR

Show that the relation S in the set R of real numbers, defined as

$S = \{ (a, b) : a, b \in R \text{ and } a \leq b^3 \}$ is neither reflexive, nor symmetric nor transitive.

14. Using the properties of determinants, Prove that : $\begin{vmatrix} x+y & x & x \\ 5x+4y & 4x & 2x \\ 10x+8y & 8x & 3x \end{vmatrix} = x^3$

15. If the function $f(x)$ given by $f(x) = \begin{cases} 3ax + b, & \text{if } x > 1 \\ 11, & \text{if } x = 1 \\ 5ax - 2b, & \text{if } x < 1 \end{cases}$ is continuous at $x = 1$, find the values of 'a' and 'b'.

16. If $y = (x + \sqrt{x^2 + a^2})^n$, prove that $\frac{dy}{dx} = \frac{ny}{\sqrt{x^2 + a^2}}$

17. Find the intervals in which $f(x) = (x+2)e^{-x}$ is increasing or decreasing.

OR

Find the equation of the tangent line to the curve $x = 1 - \cos \theta, y = \theta - \sin \theta$ at $\theta = \frac{\pi}{4}$

18. Evaluate : $\int \frac{\sin x - x \cos x}{x(x + \sin x)} dx$.

OR

Evaluate : $\int \frac{x^3}{(x-1)(x^2+1)} dx$.

19. Evaluate : $\int_0^{\pi/4} \left(\frac{\sin x + \cos x}{3 + \sin 2x} \right) dx$.

20. Show that the differential equation $(x-y) \frac{dy}{dx} = x+2y$ is homogeneous and solve it also.

21. Find the differential equation of the family of curves $(x-h)^2 + (y-k)^2 = r^2$, where h and k are arbitrary constant.

22. Let $\vec{a} = \hat{i} + 4\hat{j} + 2\hat{k}, \vec{b} = 3\hat{i} - 2\hat{j} + 7\hat{k}$ and $\vec{c} = 2\hat{i} - \hat{j} + 4\hat{k}$ Find a vector \vec{d} which is perpendicular to both \vec{a} and \vec{b} and $\vec{c} \cdot \vec{d} = 27$.

23. An urn contains 5 red and 2 black balls. Two balls are randomly drawn, without replacement. Let X represent the number of black balls drawn. What are the possible values of X ? is X a random

variable ? If yes, find the mean and variance of X.

SECTION – D

24. Two schools A and B want to award their selected students on the values of sincerity, truthfulness and helpfulness. The school A wants to award Rs. x each, Rs. y each and Rs. z each for the three respective values to 3, 2 and 1 students respectively with a total award money of Rs. 1,600. School B wants to spend Rs. 2,300 to award its 4, 1 and 3 students on the respective values (by giving the same award money to the three values as before). If the total amount of award for one prize on each value is Rs.900, using matrices, find the award money for each value. Apart from these three values, suggest one more value which should be considered for award.

25. A wire of length 20 m is to be cut into two pieces. One of the pieces will be bent into shape of a square and the other into shape of an equilateral triangle, where the wire should be cut so that the sum of the areas of the square and triangle is minimum.

26. If the area bounded by the parabola $y^2 = 16ax$ and the line $y = 4mx$ is $\frac{a^2}{12}$ sq units, then using integration, find the value of m.

OR

Find the area of the region enclosed between the two circles : $x^2 + y^2 = 4$ and $(x - 2)^2 + y^2 = 4$.

27. Find the shortest distance between the following lines :

$$\vec{r} = (\hat{i} + 2\hat{j} + 3\hat{k}) + \lambda(2\hat{i} + 3\hat{j} + 4\hat{k}) \quad \text{and} \quad \vec{r} = (2\hat{i} + 4\hat{j} + 5\hat{k}) + \mu(4\hat{i} + 6\hat{j} + 8\hat{k})$$

OR

Find the equation of the plane passing through the line of intersection of the planes $2x + y - z =$

3 and $5x - 3y + 4z + 9 = 0$ and is parallel to the line $\frac{x-1}{2} = \frac{y-3}{4} = \frac{5-z}{-5}$.

28. Suppose a girl throws a die. If she gets 1 or 2, she tosses a coin three times and notes the number of 'tails'. If she gets 3, 4, 5 or 6 she tosses a coin once and notes whether a 'head' or 'tail' is obtained. If she obtained exactly one 'tail', what is the probability that she threw 3, 4, 5 or 6 with the die?

OR

Bag I contains 3 red and 4 black balls while another bag II contains 5 red and 6 black balls. one ball is drawn at random from one of the bags and it is found to be red. Find the probability that it was drawn from bag II.

29. In a mid-day meal programme, an NGO wants to provide vitamin rich diet to the students of an MCD school. The dietician of the NGO wishes to mix two types of food in such a way that vitamin contents of the mixture contains at least 8 units of vitamin A and 10 units of vitamin C. Food 1 contains 2 units per kg of vitamin A and 1 unit per kg of vitamin C. Food 2 contains 1 unit per kg of vitamin A and 2 units per kg of vitamin C. It costs Rs. 50 per kg to purchase Food 1 and Rs.70 per kg to purchase Food 2. Formulate the problem as LPP and solve it graphically for the minimum cost of such a mixture ?

SAMPLE PAPER CLASS XII/ MATHEMATICS

GENERAL INSTRUCTIONS:

- a) All questions are compulsory
- b) The question paper consists of 29 questions divided into four sections A, B, C and D. Section A comprises 4 questions of 1 mark each, Section B comprises 8 questions of 2 marks each, Section C comprises 11 questions of 4 marks each and Section D comprises 6 questions of 6 marks each.
- c) All questions in Section A are to be answered in one word, one sentence or as per the exact requirement of the question.

1 If $A = \frac{1}{\pi} \begin{bmatrix} \sin^{-1}(\pi x) & \tan^{-1}\left(\frac{x}{\pi}\right) \\ \sin^{-1}\left(\frac{x}{\pi}\right) & \cot^{-1}(\pi x) \end{bmatrix}$ and $B = \frac{1}{\pi} \begin{bmatrix} -\cos^{-1}(\pi x) & \tan^{-1}\left(\frac{x}{\pi}\right) \\ \sin^{-1}\left(\frac{x}{\pi}\right) & -\tan^{-1}(\pi x) \end{bmatrix}$ find the value

of $A - B$ in terms of identity matrix I .

2 If \hat{a} and \hat{b} are unit vectors inclined at an angle θ , then prove that $\sin \theta = \frac{1}{2} |\hat{a} - \hat{b}|$.

3 Find the direction cosines of the line $\frac{x-2}{2} = \frac{2y-5}{-3} = z+1$. Also determine the value of $3l^2 + 2m^2 + 6n^2$.

4 Prove that $\int_0^1 \sin^{-1}\left(\frac{2x}{1+x^2}\right) dx = \frac{\pi}{2} - \log 2$

5 Find μ and δ if $(\hat{i} + 3\hat{j} + 9\hat{k}) \times (3\hat{i} - \mu\hat{j} + \delta\hat{k}) = 0$.

6 Write the value of $\Delta = \begin{vmatrix} x+y & y+z & z+x \\ z & x & y \\ -3 & -3 & -3 \end{vmatrix}$

7 Evaluate $\int_3 \sqrt{\frac{\sin^2 x}{\cos^{14} x}} dx$.

8 If $\vec{a} = \hat{i} + \hat{j} + \hat{k}$ and $\vec{b} = \hat{j} - \hat{k}$, then find the value of \vec{c} such that $\vec{a} \times \vec{c} = \vec{b}$ and $\vec{a} \cdot \vec{c} = 3$

9 Evaluate $\tan \left[2 \tan^{-1} \left(\frac{1}{5} \right) + \frac{\pi}{4} \right]$

10 Solve the following for x $\sin^{-1}(1-x) - 2 \sin^{-1} x = \cos^{-1} x$

OR

Prove that $\cot^{-1} 7 + \cot^{-1} 8 + \cot^{-1} 18 = \cot^{-1} 3$

11 Show that the four points A(4, 5, 1), B(0, -1, -1), C(3, 9, 4), D(-4, 4, 4) are coplanar.

12 Find the coordinates of foot of perpendicular drawn from the point A(-1, 8, 4) to the line joining the points B(0, -1, 3) and C(2, -3, -1).

13 In a given function $f(x) = x^3 + bx^2 + ax$, $x \in [1, 3]$, Rolle's theorem holds with $c = 2 + \frac{1}{\sqrt{3}}$, find the values of a and b.

14 Find the values of a and b so that the function $f(x) = \begin{cases} x^2 + 3x + a, & \text{when } x \leq 1 \\ bx + 2, & \text{when } x > 1 \end{cases}$ is differentiable at each $x \in \mathbb{R}$.

15 A telephone company in a town has 500 subscribers on its list and collects fixed charge of Rs 200 per subscriber per year. The company proposes to increase the annual subscription and it is believed that for every increase of Re 1, one subscriber will discontinue the service. Find what increase will bring maximum profit?

16 Evaluate $\int \tan(x - \theta) \tan(x + \theta) \tan 2x \, dx$

17 Evaluate $\int_{-2}^2 \frac{x^2}{1+5^x} \, dx$ OR Evaluate $\int_0^{\frac{3}{2}} |x \cos \pi x| \, dx$

18 Prove that $\begin{vmatrix} yz - x^2 & zx - y^2 & xy - z^2 \\ zx - y^2 & xy - z^2 & yz - x^2 \\ xy - z^2 & yz - x^2 & zx - y^2 \end{vmatrix}$ is divisible by $(x + y + z)$ and hence find the quotient.

19 A letter is known to have come from either TATANAGAR or CALCUTTA on the envelope just two letters TA are visible. What is the probability that the letter has come from i) TATANAGAR, ii) CALCUTTA.

OR

There are 3 bags each containing 5 white balls and 2 black balls. Also There are 2 bags each containing 1 white balls and 4 black balls. A black ball is drawn at random. What is the probability that the black ball came from the first group?

20 Find the particular solution of the differential equation $\frac{dy}{dx} = \frac{x(2 \log x + 1)}{\sin y + y \cos y}$, given that $y = \frac{\pi}{2}$ when $x = 1$.

21 Find the equations of tangents to the curve $y = \cos(x + y)$, $-2\pi \leq x \leq 2\pi$ that are parallel to the line $x + 2y = 0$.

OR Find the angle of intersection of the curves $y^2 = x$ and $x^2 = y$.

22 Let $f : N \rightarrow N$ be a function defined by $f(x) = 4x^2 + 12x + 15$. Show that $f : N \rightarrow S$ is invertible, where S is the range of f . Find the inverse of f and hence find $f^{-1}(31)$.

23 If the points $(1, 1, p)$ and $(-3, 0, 1)$ be equidistant from the plane $3x + 4y - 12z + 13 = 0$.

24 Show that $x^2 dy = (2xy + y^2) dx$ is a homogeneous differential equation, Also find the particular solution given that $y = 1$ when $x = 1$.

25 The standard weight of a special purpose brick is 5 Kg and it must contain two basic ingredients B_1 and B_2 . B_1 costs Rs 5 per Kg and B_2 costs Rs 8 per Kg. Strength consideration dictate that the brick should contain not more than 4 Kg of B_1 and minimum 2 kg of B_2 since the demand for the product is likely to be related to the price of the brick, find the minimum cost of the brick satisfying the above conditions. Formulate this situation as an LPP and solve it graphically.

26 An unbiased coin is tossed n times. Let the random variable X denote the number of times the head occurs if $P(X=1)$, $P(X=2)$ and $P(X=3)$ are in AP, find the value of n .

27 If the area bounded by the parabola $y^2 = 16ax$ and the line $y = 4mx$ is $\frac{\pi^2}{12}$ square units then using integration find the value of m .

28 Find the product of A and B where $A = \begin{bmatrix} -5 & 1 & 3 \\ 7 & 1 & -5 \\ 1 & -1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 1 & 2 \\ 3 & 2 & 1 \\ 2 & 1 & 3 \end{bmatrix}$ hence solve

the following system by matrix method

$$X + y + 2z = 1, 3x + 2y + z = 7, 2x + y + 3z = 2.$$

29 Find the distance of the point $(-2, 3, -4)$ from the line $\frac{x+2}{3} = \frac{2y+3}{4} = \frac{3z+4}{5}$ measured parallel to the plane $4x + 12y - 3z + 1 = 0$

DELHI PUBLIC SCHOOL RISALI BHILAI (C.G.)

SAMPLE QUESTION PAPER

Engineering Graphics (046) (Class XII) (2017-18)

Time Allowed: 03 Hours

Max. Marks:70

General Instructions:

- i. Attempt all questions.
- ii. Internal choice is given in some questions.
- iii. Use both side of drawing sheet if necessary.
- iv. All dimensions are in mm.
- v. Missing and mismatching dimension if any may be suitably assumed.
- vi. Follow the SP:46-2003 revised codes with first angle method of projection.
- vii. Give your answer according to question.

Q1. Attempt the following multiple choice questions: (5x1=5)

- (i) Knuckle thread is a modified form of which thread?
a. BSW b. Square c. V-thread d. Metric
- (ii) A continuous and projecting helical ridge of uniform section on a cylindrical surface is called?
a. lead b. screw thread c. pitch d. flank
- (iii) For a single start thread, the lead is equal to-
a. pitch b. major diameter c. twice the pitch d. half the pitch
- (iv) The largest circle of the thread of a screw or nut is?
a. Major diameter b. minor diameter c. pitch d. lead
- (v) A screw is specified by which diameter?
a. Major diameter b. minor diameter
c. pitch diameter d. chamfering diameter

Q2. (i) Construct an isometric scale which can measures up to 100mm. (4)

(ii) Draw an isometric projection of a sphere of diameter 50mm. (7)

(iii) Draw an isometric projection of a horizontal equilateral triangular prism of base side 30mm and length 40mm with its axis parallel to HP & VP, having its one rectangular face resting centrally on the top circular face of a cylindrical disc of base diameter 70mm and height 40mm, resting on its circular base on HP. Indicate direction of viewing. Give all dimensions. (13)

Q3. (i) Draw to scale 1:1 the standard profile of metric screw thread (internal) taking enlarged pitch as 50mm. Give standard dimensions. Show all the unknowns in a separate table. (8)

OR

Draw to scale 1:1 the front view and plan of a square headed bolt of diameter 24mm, keeping its axis perpendicular to HP. The length of the bolt is 110mm. (8)

(ii) Sketch free hand the front view and top view of a socket head screw of size M10, keeping its axis perpendicular to HP. Give standard dimensions. (5)

OR

Sketch freehand a woodruff key in position, on a shaft of diameter 60mm, keeping the axis of shaft parallel to VP & HP. Give standard dimensions. (5)

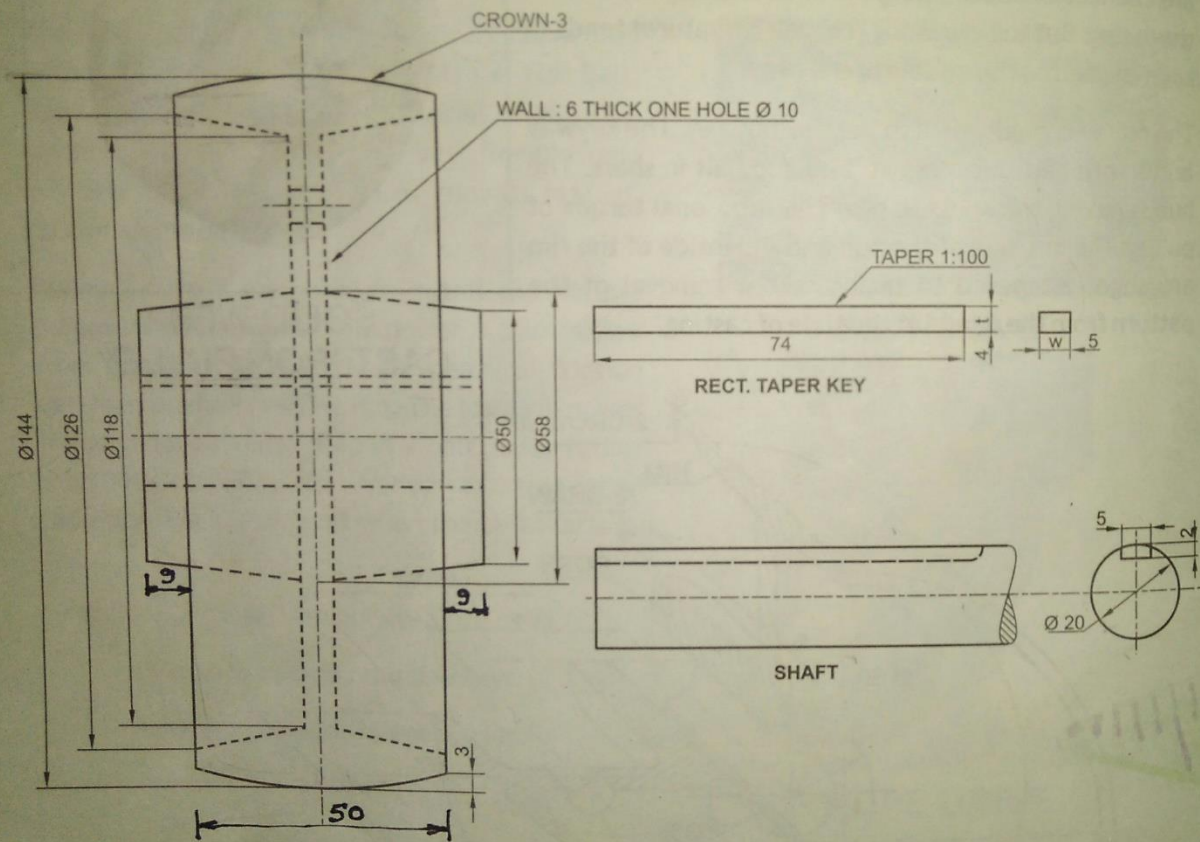
Q4.

Draw the following Orthographic Views of the properly assembled Solid C.I. pulley, shaft and Rectangular Taper Key. As shown in Fig 7.5

(a) Front View, upper half in section.

(b) Side View.

Write title and scale used. Draw projection symbol. Give '6' important dimensions.



DETAILS OF A SOLID CAST IRON PULLEY

Fig 7.5

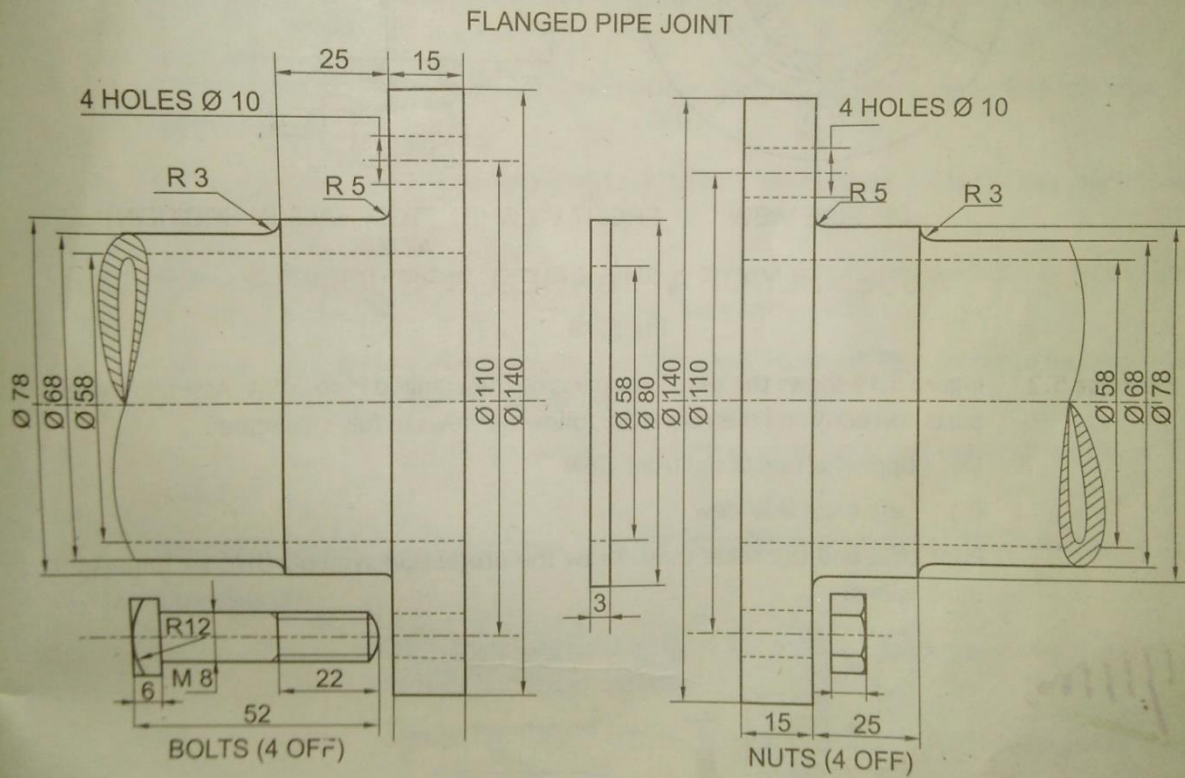
(28)

OR

Fig 5.17 shows the details of a Flanged Pipe Joint. Assemble these parts correctly, and then draw the following views to a scale full size:

- (a) Front view, showing bottom half in section
- (b) Side view as seen, from the right.

Print title and scale used. Draw the projection symbol. Give important dimensions.



DETAILS OF A FLANGED PIPE JOINT

Fig. 5.17

SAMPLE PAPER-1

Subject: Business studies

Max.Marks:80

General Instructions:

- (i). Answer to questions carrying one mark may be from one word to one sentence
- (ii). Answers to questions carrying 3 marks may be from 50-75 words
- (iii). Answers to questions carrying 4-5 marks may be about 150 words
- (iv). Answers to questions carrying 6 marks may be about 200 words
- (v). Attempt all parts of a question together

1. Just after the declaration of Lok Sabha Elections results, the BSE price index rose by 1800 points in a day. Identify the environmental factor which led to this rise. 1
2. Control system loses its effectiveness when standards are to be defined in qualitative terms. What difficulty does this situation create? 1
3. Identify the step in which capability of the employee is judged. 1
4. Give any one responsibility of a consumer in addition to obtaining cash receipt while purchasing a Microwave oven. 1
5. Give an example of employee recognition programmes. 1
6. Shahara moves & packer provides services like courier services, package and parcel services. State with reason whether the working capital requirements of Shahara moves & packer. 1
7. State two examples of services that can be marketed. 1
8. Which two steps in the process of controlling are concerned with compelling events to conform to plan? 1
9. Arjun, the production manager of Fuji Ltd give instruction to his forman to achieve a target production of 150 units per day, but did not give him the authority to order materials from the stores department. The forman could not achieve the target. Can production manager blame the forman for not achieving the target? Give reason. 3
10. Manjusha wanted to buy a Jewellery for her daughter's birthday. She asks her friend to accompany her as she is fully ignorant of the things that should be kept in mind before making such purchase. In what way would her friend help her. Give three points. 3

11. Ranjan is working in Life pharma for last 4 years. He is a sincere and efficient employee. He worked hard and many times did overtime duties to achieve organisational objectives. As he worked overtime, he fell ill and had to take leave for few days. No one showed concern and enquired about his health. He realized that he was fulfilling only some of his needs while some other needs still remained unfulfilled. 3
- a) By quoting the lines from the above paragraph, identify the needs of Ranjan which he was able to fulfill.
 - b) Also explain two other needs of Ranjan followed by the above needs, which he needs to fulfill.
12. Suhrut is an employee in a company which assembles cars . He likes to do things in a different and unique manner. Due to this habit, an idea struck him which would not only reduces the assembling time of cars but would also reduce the cost of production. Suhrut shared his idea with his supervisor. His supervisor instead of appreciating him ordered him to complete the work as per the methods and techniques decided earlier. 3
- The above paragraph describes the limitations of a management function.
- a) Identify & explain the function of management mentioned in the above paragraph.
 - b) Also identify and explain the limitation mentioned above.
13. MrNeelesh owns a Tulip Ltd which manufactures washing machines. In the initial stages organisation was running properly & all his employees were happy & contented. Recently he noticed a lot of discontentment in the organisation and targets not achieved. He appointed a Rizul, an expert in the field of management to identify the problem that his organisation is facing. After monitoring his organisation and talking to his employees, Rizul found that all Neelesh did not have confidence in the competency of his employees. Due to this all decision were made by Neelesh directly. The employees were unhappy as neesh was not ready to listen to their opinions nor took their advice while taking decision. 3
- a) Identify & explain two communication barriers because of which Tulip Ltd. was not able to achieve its target.
 - b) State one more barrier each of the types identified in Part (a) above.
14. A Ltd has currently an all equity capital structure consisting of 15,000 equity shares of Rs.100 each. The management is planning to raise another 25 lakhs to finance a major expansion program and is considering the 2 alternative methods of financing. 4
- a. To issue 25,000 equity shares of Rs.100 each
 - b. To issue 25,000 8% debentures of Rs.100 each.

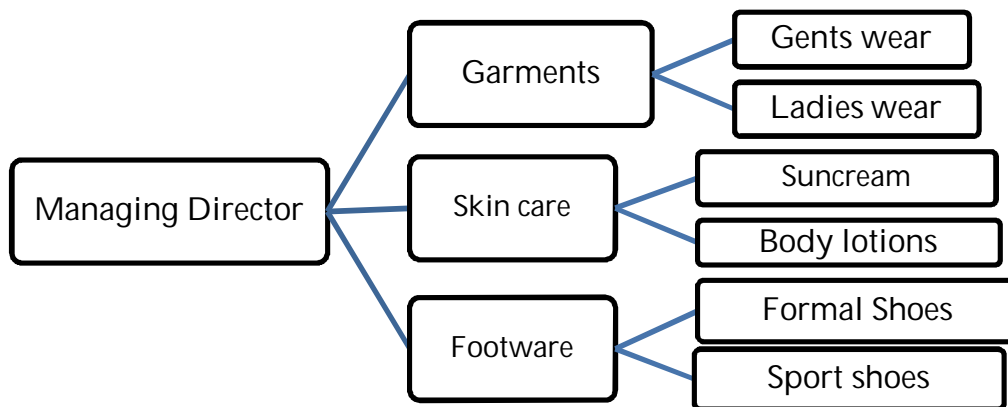
The company's expected earnings before interest & tax will be 8 lakhs.

Determine the EPS in each of the alternative and comment which alternative is best and why?

15. Explain the following features of planning
- a) Planning involves decision making
 - b) Planning is a mental exercise.
- 4

16. Indus Ind is a an established steel manufacturing company. They decided to expand their business to foreign countries too. As part of expansion process they decided to purchase Hi-tech machines for its production plant. Sincethe investment is large, it requires long term finance. It decides to raise funds by issuing equity shares. The issue involves huge floatation cost. To meet the expenses of floatation cost, the company decided to tap the money market.
- a) Name and explain the money-market instrument the company can use for the above purpose.
 - b) What is the duration for which the company can get funds through this instrument?
 - c) State any other purpose for which this instrument can be used.
- 4

17.



- a) Identify the type of organisational structure shown above in diagram.
 - b) State three limitations of the organisational structure identified in part (a)
- 4

18. Explain how planning and controlling are inter-related?
- 4

19. My car Ltd decided to setup its new car manufacturing factory in the backward areas West Bengal. Where very less job opportunities were available. People of that area welcomed this effort of My car Ltd. The company also decided to provide facilities like school, hospital, market etc... in the factory premises so that the people are attracted to join the factory as workers. My Car Ltd earned huge profit in the first year. 4
- a) Identify and explain the objectives of management discussed above.
 - b) State two values which the company wanted communicate to the society.
20. Tamanna purchased one liter of coconut oil from a near supermarket. After using it she had a doubt that it is adulterated. She sent this bottle to laboratory test which confirmed that the coconut is adulterated. She filed a suit in the consumer court and court is satisfied about the genuineness of the compliant. 5
- a) State any four reliefs that court might grant her.
 - b) Identify the value that is being ignored by the coconut manufacturing unit.
21. Cyprus Ltd was engaged in the business of food processing and selling its product under a popular brand. Their business started expanding due to its good quality products provided at reasonable price. Due to increase in competition in the market and to keep its market share the company directed its existing workers to work overtime. This resulted in many problems like the efficiency of workers declined due to work pressure, sometimes workers had to work for more than one superior, one division had to handle more than two products etc... All this resulted in overlapping and wastage. The workers were becoming indiscipline. The team spirit, which was once the characteristics of the company began to decline. Workers were feeling cheated and their initiative was declining. The quality of products was beginning to decline and market share was on the verge of decrease. Actually, the company had implemented changes without creating infrastructure. 5
- Identify five principles of management given by Henry Fayol that being violated by the company. Explain these principles in brief.

22. Smitha found a worm from a newly opened packet of biscuit manufactured by a reputed company, X-tra Ltd. She went back to the shopkeeper from whom pack was purchased. The shop-keeper instructed her to call up the call center. When all her efforts failed, she went to a consumer activist group to seek help. The group took measures to impose restrictions on the sale of the firm's products of the particular batch and urge consumers to refrain from buying the products of the company. X-tra Ltd lost its image in the market. The CEO gives the responsibility of bringing back the lost image of the company to his manager. 5
- Identify the concept of marketing management which will help the manager getting the just of the above crisis.
Also explain the role of above identified concept by stating two points.
23. Why is it important for a business organisation to understand their environment? Explain briefly. 6
24. Harish, the managing director of BIG SHOES is planning to manufacture toys for utilizing waste materials from his manufacturing unit. He decided that this manufacturing unit will be set up in a rural area of Assam, where people have less job opportunity and labour was available at very low rate. He also thought of giving equal opportunity to men and women. For this he selected Praveen, Indra, Aslam & Sunjitha as heads of sales, accounts, purchase and production departments. 6
- a) Identify & explain the step of staffing which Harish has fulfilled in the above paragraph.
b) Also explain the next two steps that Harish has to follow after the step identified in (a)
25. Mr. Shah is a tour operator. He has his tours operated between Jaipur and Agra. He wanted to buy 50 more buses so that he can expand his business further. Identify & explain the factors that Mr. Shah would consider while determining his fixed capital requirements of the business. 6

SAMPLE PAPER-1

CLASS-12
MARKING SCHEME
SUBJECT: BUSINESS STUDIES

Sl.No	Value points	Marks	Total
1.	Political Environment	1	1
2	Standards defined in qualitative terms makes measurement of performance and their comparison with standards difficult.	1	1
3	Performance appraisal	1	1
4	A consumer must be quality conscious and he must check ISI mark, which provides quality assurance	1	1
5	Displaying the name of an employee on company's notice board because of his remarkable performance.	1	1
6	Low, as it is a service industry. Service industry usually do not have to maintain inventory.	1	1
7	Insurance,	½	1
	Business process outsourcing	½	
8	Comparing actual performance with standards	½	1
	Taking corrective actions.	½	
9	NO, Arjun cannot hold forman responsible for not completing the work as forman was not given the authority by Arjun. The principle of authority responsibility says that there should be a balance between authority and responsibility. If authority given is more it will lead to its misuse and responsibility given without proper authority then the work cannot be done.	3	3

- 10 The responsibilities of a consumer are
- a) Be aware about various goods and services available in the market so that an intelligent and wise choice can be made.
 - b) Buy only standardised goods as they provide quality assurance. Thus, look for ISI mark on electrical goods, FPO mark on food products, Hallmark on jewelry etc.
 - c) Learn about the risks associated with products and services, follow manufacturer's instructions and use the products safely.
 - d) Read labels carefully so as to have information about prices, net weight, manufacturing and expiry dates, etc.
 - e) Assert yourself to ensure that you get a fair deal.
 - f) Be honest in your dealings. Choose only from legal goods and services and discourage unscrupulous practices like black-marketing, hoarding etc.
 - g) Ask for a cash memo on purchase of goods or services. This would serve as a proof of the purchase made.
 - h) File a complaint in an appropriate consumer forum in case of a shortcoming in the quality of goods purchased or services availed. Do not fail to take an action even when the amount involved is small.
 - i) Form consumer societies which would play an active part in educating consumers and safeguarding their interests.
 - j) Respect the environment. Avoid waste, littering and contributing to pollution.
11. I. Ranjan is working in Life pharma for last 4 years . -
Physiological needs & safety / security needs are being fulfilled. 1/2
- II. Needs of Ranjan that are to be fulfilled are
- a. Affiliation/Belonging Needs: These needs refer to affection, sense of belongingness, acceptance and friendship. 1
 - b. Esteem Needs: These include factors such as self-respect, autonomy status, recognition and attention. 1
- 3
12. a) Planning is the management function mentioned in the paragraph. 1
- Planning involves setting objectives and developing appropriate courses of action to achieve these objectives. 1
- Limitations of planning mentioned here is 3

a) **Planning reduces creativity:** Planning is an activity which is done by the top management. Usually the rest of the members just implements these plans. As a consequence, middle management and other decision makers are neither allowed to deviate from plans nor are they permitted to act on their own. Thus, much of the initiative or creativity inherent in them also gets lost or reduced. 1

13. I. The two communication barriers were:

a. Organisational barriers:

Organisational policy: If the organisational policy, explicit or implicit, is not supportive to free flow of communication, it may hamper effectiveness of communications. 1

b. Personal Barrier:

Lack of confidence of superior on his subordinates: If superiors do not have confidence on the competency of their subordinates, they may not seek their advice or opinions. 1 3
1/2
1/2

II. **Organisational Barrier: -Complexity in organisation structure**

Personal barrier:- Fear of challenge of authority

14.

	1 st Option	2 nd option
PBIT	8,00,000	8,00,000
(-) Interest on debentures	Nil	(2,00,000)
Earnings after tax	8,00,000	6,00,000
EPS	8,00,000/ 40,000 = Rs.20	6,00,000/ 15,000 = Rs.40

1+1

3

The best alternative will be the 2nd option as it results in higher returns to the share holders. 1

15. Features of Planning

Planning involves decision making: Planning essentially involves choice from among various alternatives and activities. If there is only one possible goal or a possible course of action, there is no need for planning because there is no choice. The need for planning arises only when alternatives are available. In actual practice, planning presupposes the existence of alternatives. Planning, thus, involves thorough examination and evaluation of each alternative and choosing the most 1 1/2
3

- appropriate one.
- Planning is a mental exercise:** Planning requires application of the mind involving foresight, intelligent imagination and sound judgment. It is basically an intellectual activity of thinking rather than doing, because planning determines the action to be taken. However, planning requires logical and systematic thinking rather than guess work or wishful thinking. In other words, thinking for planning must be orderly and based on the analysis of facts and forecasts. 1 ½
16. a) **Commercial Paper:** Commercial paper is a short-term unsecured promissory note, negotiable and transferable by endorsement and delivery with a fixed maturity period. It is issued by large and creditworthy companies to raise short-term funds at lower rates of interest than market rates. 1
1
4
- b) It usually has a maturity period of 15 days to one year. 1
- c) Companies use this instrument for purposes such as bridge financing. 1
17. a) **Divisional Structure** 1
- b) The divisional structure has certain disadvantages. Some of them are as follows: 1
1. Conflict may arise among different divisions with reference to allocation of funds and further a particular division may seek to maximise its profits at the cost of other divisions. 1
2. It may lead to increase in costs since there may be a duplication of activities across products. Providing each division with separate set of similar functions increases expenditure. 1
4
3. It provides managers with the authority to supervise all activities related to a particular division. In course of time, such a manager may gain power and in a bid to assert his independence may ignore organisational interests. 1
18. Planning and controlling are inseparable twins of management because: 1
1. **Without planning there is no basis for controlling:-** Controlling requires standards with which performance can be measured and evaluated. These standards are laid down in planning. 1
4
2. **Planning is meaningless without controlling:-** Planning sets the standards, controlling observes the deviations from the standards and initiates corrective actions. 1

3. Planning is an intellectual process involving thinking and analysis to discover and prescribe an appropriate course of action for achieving Objectives Controlling on the other hand checks whether decisions have been translated into desired actions. Planning is thus prescribing and controlling is evaluative. 1
4. **Planning and controlling both are forward looking:-**
 Planning is future oriented function as it involves looking in advance and making policies for future. The controlling function makes sure that in future actual performance and output match with planned performance so it is forward looking.
5. **Planning and controlling both are looking back-** We look back to the performance which is already achieved by the employees and compare it with plan.
 (any four points)
- 19 I. The objectives of management referred to are
- a) Organisational objective:
 Management is responsible for setting and achieving objectives for the organisation. It has to achieve a variety of objectives in all areas considering the interest of all stakeholders including, shareholders, employees, customers and the government. The main objective of any organisation should be to utilise human and material resources to the maximum possible advantage 1 ½
- b) Social Objective:
 It involves the creation of benefit for society. As a part of society, every organisation whether it is business or non-business, has a social obligation to fulfill. This refers to consistently creating economic value for various constituents of society. This includes using environmental friendly methods of production, giving employment opportunities to the disadvantaged sections of society 1 ½ 4
- II. Values which company wanted to communicate to the society are:
- a) Providing employment opportunities
 b) Development of backward regions
- 20 a) The four reliefs available
1. To remove the defect in goods or deficiency in service. 1 5
2. To replace the defective product with a new one, free from 1

- any defect.
3. To refund the price paid for the product, or the charges paid for the service. 1
 4. To pay a reasonable amount of compensation for any loss or injury suffered by the consumer due to the negligence of the opposite party. 1
 5. To pay punitive damages in appropriate circumstances.
 6. To discontinue the unfair/restrictive trade practice and not to repeat it in the future.
- (any four relief)
- b) Values ignored by the manufacturer are Business ethics, Social responsibility 1/2
- 21 Principles of management violated by the company are 1/2
- a. Unity of command
According to Fayol there should be one and only one boss for every individual employee. If an employee gets orders from two superiors at the same time the principle of unity of command is violated. The principle of unity of command states that each participant in a formal organisation should receive orders from and be responsible to only one superior. 1
 - b. Division of work
Work is divided into small tasks/jobs. A trained specialist who is competent is required to perform each job. Thus, division of work leads to specialisation. According to Fayol, "The intent of division of work is to produce more and better work for the same effort. Specialisation is the most efficient way to use human effort." 1
 - c. Discipline
Discipline is the obedience to organisational rules and employment agreement which are necessary for the working of the organisation. According to Fayol, discipline requires good superiors at all levels, clear and fair agreements and judicious application of penalties. 1
 - d. Espirit de corps
Management should promote a team spirit of unity and harmony among employees, according to Fayol. Management should promote teamwork especially in large organisations because otherwise objectives would be difficult to realise. 1
 - e. Order
According to Fayol, "People and materials must be in suitable places at appropriate time for maximum 1
- 5

efficiency.” The principle of order states that ‘A place for everything (everyone) and everything (everyone) in its (her/his) place’.

f. Remuneration

The overall pay and compensation should be fair to both employees and the organisation. The employees should be paid fair wages, which should give them at least a reasonable standard of living. At the same time it should be within the paying capacity of the company.

g. Initiative

Workers should be encouraged to develop and carry out their plans for improvements according to Fayol. Initiative means taking the first step with self-motivation. Initiative should be encouraged.

(any five principles to be identified & explained)

22

a) Public Relations

1

b) Role of public relations

1. More credible: Public relation activity is considered more reliable. Public is of the opinion that they can be misled by advertising and other such mediums for increasing sales. But this is not possible in public relations because its objective is to improve the image of organisation

2

5

2. Economical medium: to attract the attention of public this is the cheapest medium available. Like lot of more money has to be spent on advertisement as compared to it.

2

23

It enables the firm to identify opportunities and getting the first mover advantage: Opportunities refer to the positive external trends or changes that will help a firm to improve its performance. Environment provides numerous opportunities for business success. Early identification of opportunities helps an enterprise to be the first to exploit them instead of losing them to competitors.

1

It helps the firm to identify threats and early warning signals: Threats refer to the external environment trends and changes that will hinder a firm’s performance. Besides opportunities, environment happens to be the source of many threats. Environmental awareness can help managers to identify various threats on time and serve as an early warning signal.

1

6

It helps in tapping useful resources: Environment is a source of various resources for running a business. To engage in any type of activity, a business enterprise assembles various resources

1

called inputs like finance, machines, raw materials, power and water, labour, etc., from its environment including financiers, government and suppliers. They decide to provide these resources with their own expectations to get something in return from the enterprise. The business enterprise supplies the environment with its outputs such as goods and services for customers, payment of taxes to government, return on financial investment to investors and so on.

1

It helps in coping with rapid changes: Turbulent market conditions, less brand loyalty, divisions and sub-divisions (fragmentation) of markets, more demanding customers, rapid changes in technology and intense global competition are just a few of the images used to describe today's business environment. All sizes and all types of enterprises are facing increasingly dynamic environment. In order to effectively cope with these significant changes, managers must understand and examine the environment and develop suitable courses of action.

1

It helps in assisting in planning and policy formulation: Since environment is a source of both opportunities and threats for a business enterprise, its understanding and analysis can be the basis for deciding the future course of action (planning) or training guidelines for decision making (policy). For instance, entry of new players in the market, which means more competition may make an enterprise think afresh about how to deal with the situation.

1

It helps in improving performance: The final reason for understanding business environment relates to whether or not it really makes a difference in the performance of an enterprise. Many studies reveal that the future of an enterprise is closely bound up with what is happening in the environment. And, the enterprises that continuously monitor their environment and adopt suitable business practices are the ones which not only improve their present performance but also continue to succeed in the market for a longer period.

24

a) **Selection:** Selection is the process of choosing from among the pool of the prospective job candidates developed at the stage of recruitment. Even in case of highly specialised jobs where the choice space is very narrow, the rigour of the selection process serves two important purposes: (i) it ensures that the organisation gets the best among the available, and (ii) it enhances the self-esteem and prestige of those selected and conveys to

2

6

them the seriousness with which the things are done in the organisation.

b) **Placement and Orientation:** Orientation is, thus, introducing the selected employee to other employees and familiarising him with the rules and policies of the organisation. Placement refers to the employee occupying the position or post for which the person has been selected.

Training and Development: Training and Development is an attempt to improve the current or future employee performance by increasing an employee's ability to perform through learning, usually by changing the employee's attitude or increasing his or her skills and knowledge.

25 Factors affecting Fixed capital requirement of a company are

1. Nature of Business: The type of business has a bearing upon the fixed capital requirements. For example, a trading concern needs lower investment in fixed assets compared with a manufacturing organisation; since it does not require to purchase plant and machinery etc.

2. Scale of Operations: A larger organisation operating at a higher scale needs bigger plant, more space etc. and therefore, requires higher investment in fixed assets when compared with the small organisation.

Choice of Technique: Some organisations are capital intensive whereas others are labour intensive. A capital-intensive organisation requires higher investment in plant and machinery as it relies less on manual labour. The requirement of fixed capital for such organisations would be higher. Labour intensive organisations on the other hand require less investment in fixed assets. Hence, their fixed capital requirement is lower.

4. Technology Upgradation: In certain industries, assets become obsolete sooner. Consequently, their replacements become due faster. Higher investment in fixed assets may, therefore, be required in such cases. For example, computers become obsolete faster and are replaced much sooner than say, furniture. Thus, such organisations which use assets which are prone to obsolescence require higher fixed

capital to purchase such assets.

5. Growth Prospects: Higher growth of an organisation generally requires higher investment in fixed assets. Even when such growth is expected, a business may choose to create higher capacity in order to meet the anticipated higher demand quicker. This entails higher investment in fixed assets and consequently higher fixed capital. 1

6. Diversification: A firm may choose to diversify its operations for various reasons, With diversification, fixed capital requirements increase e.g., a textile company is diversifying and starting a cement manufacturing plant. Obviously, its investment in fixed capital will increase. 1

7. Financing Alternatives: A developed financial market may provide leasing facilities as an alternative to outright purchase. When an asset is taken on lease, the firm pays lease rentals and uses it. By doing so, it avoids huge sums required to purchase it. Availability of leasing facilities, thus, may reduce the funds required to be invested in fixed assets, thereby reducing the fixed capital requirements. Such a strategy is specially suitable in high risk lines of business.

8. Level of Collaboration: At times, certain business organisations share each other's facilities. For example, a bank may use another's ATM or some of them may jointly establish a particular facility. This is feasible if the scale of operations of each one of them is not sufficient to make full use of the facility. Such collaboration reduces the level of investment in fixed assets for each one of the participating organisations.

SAMPLE PAPER-2

Subject: Business Studies

CLASS-12

Max.Marks: 80

General Instructions

- i) Answers to questions carrying 1 mark may be from one word to one sentence.
- ii) Answers to questions carrying 3 marks may be from 50 - 75 words.
- iii) Answers to questions carrying 4 - 5 marks may be about 150 words.
- iv) Answers to questions carrying 6 marks may be about 200 words.
- v) Attempt all parts of a question together.

1. Your grandfather has retired as the director of a manufacturing company. At which level of a management was he working? Different types of functions are performed at this level. State any one function. 1

2. If we delegate authority, we multiply it by two, if we decentralize it, we multiply it by many'. Name the two concepts to which this statement is related. 1

3. Some friends joined together and set-up a multi-product company. Their company makes four different products. Three products of company have been successfully launched in the market. But the company has not succeeded to launch fourth product in the market. What sort of organizational structure, in your view, might have been adopted by the company? 1

4. Name the training method in which a newly appointed employee is acquainted with the organization. 1

5. Mr. Nitin, a Chartered Account, works as financial advisor of 'Vishal Mega Mart limited'. In this connection, he continuously visits the company. During the course of meetings with senior managers and operators, he came across a secret information of the company. He learnt that as against the previous years, the company, this year is going to declare handsome dividend. Often it is observed that when such news becomes public then the share market jumps up. Considering it, Mr. Nitin purchased

large number of company's share before this news reached the public. Identify and explain the type of trading of shares conducted by Mr. Nitin, as mentioned in the above paragraph. 1

6. Miss Bala is working as the production manager in a company. She divided the work among her subordinates in accordance with their interest and ability. Not only this, she even gave them all the authorities to take decisions relating to their work. At the end of the first month of the year, it was found that Mr. Raj had not achieved his target. He was lagging far behind his target. Miss Bala asked him to give the reason within two days why his performance was low. With which concept of management the conversation between Miss Bala and Mr. Raj referred to in the above paragraph is related? Identify it. 1

7. A general manager of Ding Dong Ltd. is responsible for the selection of managerial employees of various departments of his organization. Now, Ding Dong Ltd. has expanded and grown in size. The general manager felt overburdened, so, with the approval of the managing director, he delegated the responsibility of selection of managerial employees to all the departmental heads for their respective departments. Identify the concept of management discussed above. 1

8. Mrs. Shikha is the Managing Director of a Textile Company. The organizational structure of the company is divided into four different departments. Each department tries to achieve its own departmental objective due to which she faces difficulties in effecting coordination among different departments. Identify the type of formal organizational structure followed by organization. 1

9. Often it is observed that some political parties of a country are in favor of giving a lot of freedom to business while some are opposed to this view. When general elections are approaching in country the impact of this approach of the political parties can be seen on the share market. For example, general elections are about to take place in a country, and the general view of the people is that the political party having a positive approach to business will come into power. As a consequence of this news, the rates of shares in the share market will be rising.

In this paragraph given above one particular feature and two dimension of business environment have been described. Identify them. 3

10. Mr. Anil Garg is an HR manager of "Rohan Shoes Udyog". He undertook a study with the sole purpose of minimizing the cost of production and raising the quality of the product of his company. The findings of the study were put into practice immediately. The company succeeded in its purpose. It witnessed rapid rise in

demand of its products. It has its effect on the number of the employees. The company felt the need of 30 more employees in order to meet this need. Mr. Garg initiated staffing process. So far, he has completed the first two steps of this process and is now at the final point of the third step.

- (a) Identify the study undertaken to improve production.
- (b) Identify and describe the final point of the third step of staffing process. 3

- 11. Define capital market. State the two parts of capital market. 3
- 12. A production manager pays less than the minimum wages and gets their signatures on minimum wages. Which values are not being followed by him? 3
- 13. Nikita Electronics plans to sell its new television sets under the exchange scheme. Which type of plan is it? Explain. 3
- 14. 'Environment provides with constraints and opportunities'. Discuss with the help of an example.4
- 15. Neha runs a factory wherein she manufactures shoes. The business has been doing well and she intends to expand by diversifying into leather bags as well as western formal wear thereby making her company a complete provider of corporate wear. This will enable her to market her business unit as the one stop for working women. Which type of structure would you recommend for her expanded organization and why? 4
- 16. Define advertising. What are its main features? Explain. 4
- 17. The employees of Seema Ltd., a Software Company, have formed a dramatic group for their recreation. Name the type of organization so formed and state its three features. 4
- 18. One fine morning, Mr. Manish the chief executive of a company contacted the personnel manager and enquired "What is the problem with the workers?" The wage bill shows that we pay them the highest in the industry. Our working conditions are fine. Our fringe benefits are excellent. Still, these workers are not motivated. What do they really require? "The personnel manager replied. "I have already informed you a number of times that money, working conditions and benefits are not enough, other things are equally important. One of the worker recently gave me a clue, he felt that hard work and efficiency go unnoticed and

unrewarded in our organization. Our promotion and benefit plans are tied upto the length of service. Even the lazy workers, accordingly enjoy all the benefits in the organization, which, in fact, according to workers, should go only to those who work hard.”

Identify the type of incentives referred to by Mr. Manish in the given case. State any two other incentives for the employees which the personnel manager wanted to introduce. Also identify the values which were being ignored in the organization.

4

19. The marketing head of an organization made an exhaustive plan achieving its sales target. Targets and standards were fixed. However, when the plan was put to test, it was found that the targets set in the plant were impractical. As a result, the plan was re-processed and fresh standards set.

(a) Identify and explain the management function involved in the process.

(b) Give any two limitations of management functioning identified in part (a).4

20. What do you mean by ‘Channels of Distribution’? What functions do they play in the distribution of goods and services? Explain. 5

21. State any five methods of floating new issue in the primary market. 5

22. ABC Ltd. is a renowned company in Kirti Nagar Market of Delhi for manufacturing quality furniture. From last 20 years, ABC Ltd. has occupied the No. 1 position in the market. It also specialized in imported furniture besides domestic one. It manufactures for both commercial and residential/domestic use. For this, company has hired two managers, one each for commercial department and residential department. Mr. Sharma, who is the in charge of manufacturing furniture for commercial purpose, got the target of manufacturing 100 pieces of office tables from a corporate house. To achieve this target, Mr. Sharma had to operate on double shifts due to power failure most of the time. He is able to manufacture 100 pieces of office tables but at a higher production cost. Whereas, Mr. Gupta, who is the in charge of manufacturing furniture for residential/domestic use, got the target of manufacturing 50 double beds for an Ashram in Vrindavan. Mr. Gupta concentrated more on manufacturing beds with fewer resources (i.e. cutting down the cost of production) due to which he could not achieve the target.

(a) From the two, which manager is effective but not efficient?

(b) Name the manager who is efficient but not effective.

(c) What should be the ideal aim of managers in the given situations? 5

23. What role can you, as a student, play to contribute to the cause of consumer protection? 6

24. How can a company having a 'less' working capital call itself successful?" Ravi asked his friend Moni. They had recently joined Dev Pvt. Ltd. as Management Trainees and were having their lunch in the company's staff canteen. Dev is an infrastructural company, with its scale of operation confined to Punjab. Ravi had spent the morning, studying the company's balance sheet for the years 2013-14 and 2014-15 and was surprised to see that the company's current liabilities were almost equal to its current assets. Explain any six factors which can be used by Moni to explain the reasons for the lower working capital of the company. 6

25. Two friends, Beena and Seema, are working as managers in the different departments of 'Royal Limited'. They often talk about the performance level in their respective departments. Both of them are not satisfied with their subordinates. They tried to ascertain when the employees got their full salaries, what problem they had in working honestly. After investigating for some days, they arrived at the conclusion that there was lack of motivation in their company. Both held a meeting together in order to find out the solution of the problem. Beena suggested participation of the employees in the company's profits, which she thought would create in the employees the feeling of belongingness to the company. Such a feeling, she was of the view, would have a direct influence on their performance level. Seema, on the basis of her experience, said that if the feeling of job security was aroused in the employees, there could be improvement in their performance level. Both of them contacted their chief executive officer - CEO with their suggestions. All three of them deliberated over this issue. The CEO listened to them very attentively. He said, "Both of you are right, but I too have a suggestion. If the employees are made participants in taking decision, they will feel good and their performance level will improve." Ultimately, the company implemented the suggestions of all the three of them. In the above paragraph, different persons have spoken about the three methods of motivation. Identify these methods and explain. 6

SAMPLE PAPER-2
Marking Scheme

CLASS : 12
Subject: Business Studies

Qn. No	Value Points	Points wise marks	Total Marks
1	Top level management	1/2	
	Determining Objectives	1/2	1
2	(a) Delegation of authority	1/2	
	b) Decentralization	1/2	1
3	Divisional organisation structure	1	
			1
4	It is induction training	1	
			1
5	It is insider trading.	1/2	
	It means buying and selling of shares to earn profit by the holders of company's secret information	1/2	1
6	Accountability	1	1
7	The concept of decentralization is discussed here.	1	1
8	Functional Organisation	1	1
9	a) Inter Relatedness	1 +	3
	b) Political environment & Economic Environment	2	
10	a) Method study	1	3
	b) Name of the third step of staffing is "Selection and final point of selection is contract of employment.	1/2 1/2 1	

	A brief explanation of contract of employment		
11	<p>Capital Market : It refers to that market where transactions in long-term securities are made.</p> <p>Primary market with brief explanation Secondary market with brief explanation</p>	<p>1</p> <p>$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{2} + \frac{1}{2}$</p>	3
12	<p>(i) Disobeying the law by not giving minimum wages.</p> <p>(ii) To take signature on minimum wages is fraud.</p> <p>(iii) Exploitation of workers.</p> <p>Any other valid value</p>	<p>1</p> <p>1</p> <p>1</p>	3
13	<p>Strategy : It is a comprehensive plan for accomplishing an organization's objectives. It includes these dimensions :</p> <p>(a) Determining long term objectives (b) Adopting a particular course of action (c) Allocating resources necessary to achieve the objective (a brief explanation of the above)</p>	<p>1 +</p> <p>2</p>	3
14	<p>Yes, the environment provides us with both constraints and opportunities such as economic conditions, customs, government regulations, availability of natural resources, labour supply etc. for example, despite many initiatives, foreign direct investment in India is not picking up (Like China) in the country due to political and bureaucratic reasons.</p> <p>On the other hand, environment offers the firm numerous opportunities due to changing needs of customers and markets. For example, the growing demand for air conditioners has attracted many domestic new comers (Godrej,</p>	2+2	4

	<p>Kirloskar etc.) as well as multinationals (LG electronics, whirlpool, Electrolux etc.) into the industry.</p> <p>(any two examples related to any of the dimensions can be discussed)</p>		
15	<p>Neha should decide for divisional structure because :</p> <p>(a) Such a structure will enable her to diversify the unit into varied product lines.</p> <p>(b) It will help her to know the profit margins from each product line. As a result, she can plant and select the specific products for future diversification.</p> <p>(c) It will facilitate further expansion without disturbing the existing units.</p> <p>(d) It will ensure steady growth of each product line.</p> <p>(any three points from (a),(b),(c) & (d)</p>	1+1+1+1	4
16	<p>." It is an impersonal form of mass communication by the marketers, who pay for it for the promotion of goods and services The features of advertising are :</p> <p>(a) Paid Form : An advertisement is a paid form of communication for which the sponsor/marketer bears the cost.</p> <p>(b) Impersonality : It is impersonal in nature, as it is done through the medium of communication available and face to face contact is absent.</p> <p>(c) Identified Sponsor : The sponsors who bear its cost are identified in it..</p>	1 + ½ for each feature & ½ for the explanation of the same =3	4

17	<p>It is an informal organization. . The main features are:</p> <p>(i) Based on Formal Organisation : This is based on formal organization where people also have informal relations. (It means first of all, the formal organisation is established and then informal organization is created out of it)</p> <p>(ii) It has no Written Rules and Procedures : In this organization, there are no written rules and procedures to govern inter-relationship. But, there are group norms which have to be observed.</p> <p>(iii) Independent Channels of Communication : In this organization, relations among different people are not defined because a person at the lowest rank can have direct contact with the person at the highest level. The flow of communication cannot be specified.</p>	<p>1 + 1 + 1 + 1</p>	4
18	<p>Mr. Manish the chief executive of company is referring to financial incentives in the form of pay and allowances given to employees. The personnel manager wanted to introduce non financial incentives in the organization which are in the form of:</p> <p>(a) Recognition : The hard working employees should be acknowledged with a show of appreciation. The recognition could be in the form of congratulating the employee, installing reward or certificate, rewarding good suggestions of employees.</p> <p>(b) Career Advancement Opportunities : People always need to grow in their career, so if the employees are provided proper opportunities for growth and career advancement through equal and sound promotion policy and chance to develop their personality, they feel much satisfied and become more committed to the organizational goals.</p> <p>The values being ignored in the organization are : (a) Harmony and Cooperation, OR (b) Recognition and Motivation.</p>	<p>1 + 1 + 1</p>	4
19	<p>The management function involved in the process is controlling.</p> <p>It is defined as the process of setting standards, measuring actual performance and taking corrective actions for deviations, if any. Limitations of controlling.</p> <p>(a) Difficulty in setting quantitative standards : If</p>	<p>1 + 1 +</p>	4

	<p>the standards in the controlling system cannot be defined in quantitative terms, then the measurement of performance and their comparison with standard is difficult due to which the control system may lose its effectiveness.</p> <p>(b) Little Control on External Factors : A manager can control internal factors but it is impossible to control external factors (like government policy). Therefore, a situation of absolute discipline cannot be established.</p>	<p>1 +</p> <p>1</p>	
20	<p>Channels of distribution are set of firms and individuals that take title or assist in transferring the title of goods or services from the producers to the consumers. They help in the smooth flow of goods by creating possession, place and time utilities.</p> <p>The functions that are performed by channels of distribution are : (any three)</p> <p>(a) Sorting : They procure the supply of goods from different sources and then sort it out into homogenous groups on the basis of size or quality.</p> <p>(b) Accumulation : They accumulate goods in large homogeneous stocks and help in maintaining continuous flow of supply.</p> <p>(c) Allocation : They allocate large homogeneous stocks into smaller marketable lots.</p> <p>(d) Assorting : They procure goods from different sources and deliver them in combination, as desired by customers.</p> <p>(e) Product Promotion : They help in product promotion by participating in activities such as demonstrations, special display contests etc. To increase the sale of products.</p> <p>(f) Negotiation : They negotiate the price, quality guarantee and other related matters to ensure maximum satisfaction to customers.</p> <p>(g) Risk Taking : They take title of goods and thereby assume risk of price and demand fluctuation, spoilage, breakage etc</p>	<p>2 +</p> <p>1+1+1</p>	5
21	(i) Public Issue : Under this method, the	½ for each	5

	<p>company issues a prospectus and invites the general public to purchase shares or debentures.</p> <p>(ii) Offer for Sale : Under this method, firstly the new securities are offered to an intermediary at a fixed price. They further resell the same to the general public at a higher price. The advantage of doing this is that the issuing company feels free from the tedious work of making a public issue.</p> <p>(iii) Private Placement : Under this method, the company sells securities to the big financial institutions or brokers instead of selling them to the general public. They in turn, sell these securities to the selected clients at a higher price. This method is preferred as it is a cheaper method of raising funds as compared to a public issue.</p> <p>(iv) Right Issue : This method is used by those companies which have already issued their shares. When an existing company issues new shares, first of all, it invites its existing shareholder. This issue is called the right issue. In this case, the shareholder has the right either to accept the offer for himself or assign a part or all of his rights in favour of another.</p> <p>(v) Electronic Initial Public Issue (E-IPOS) : Under this method, companies issue their securities through the electronic medium (i.e., internet). The company issuing securities through this medium enters into a contract with a stock exchange. SEBI registered broker have to be appointed for the objective of accepting applications. This broker regularly sends information about it to the company. The company issuing security also appoints a Registrar, who helps in making the issue a success by establishing contact with the stock exchange.</p>	<p>heading= 2 $\frac{1}{2}$ + $\frac{1}{2}$ for each heading to be explained= 2 $\frac{1}{2}$</p>	
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22	<p>a) Mr. Sharma is effective but not efficient because he is able to achieve his target but at a higher production cost, as for the same output, more inputs were used.</p> <p>(b) Mr. Gupta is efficient as more goods are produced with fewer resources, i.e. cutting down costs, but not effective as he could not achieve his target and, therefore, the goods could not reach the market and hence, the demand for them declines.</p> <p>© Managers should achieve their goals with minimum resources, i.e., as efficiently as possible while maintaining a balance between effectiveness and efficiency. High efficiency associated with high effectiveness should be the aim of all managers.</p>	<p>1 +</p> <p>1 +</p> <p>3</p>	5
23	<p>(a) Encourage students to boycott adulterated and low quality goods/eatables in school canteens.</p> <p>(b) Easy ways for testing adulterated goods can be explained to other students eg., checking adulteration in milk, tea leaves etc.</p> <p>(c) To display consumer rights and responsibilities, special assemblies can be organized.</p> <p>(d) Commerce stream students can put a stall and give demonstration on responsibilities of a consumer.</p> <p>(e) To set up voluntary complaint clubs for consumer guidance and counseling.</p> <p>(f) Essay writing competitions, debate competition and quiz can be organized to promote the awareness on consumer protection.</p> <p>Any other creative suggestion should be allotted marks accordingly.</p>	1 x 6	6
24	<p>Following Factors can be used by Moni to explain the reasons for lower working capital.</p> <p>(a) Nature of Business : Dev Ltd is a service industry which is mainly involved in transport and warehousing, so that they do not have to maintain inventories due to which its working capital requirements are very less.</p> <p>(b) Scale of Operations : Dev Ltd is operating at a</p>	1 x 6	6

	<p>small scale at the district level which reduces its cash requirement and other current assets and hence, it requires a lesser working capital.</p> <p>(c) Credit Allowed : Dev Ltd. must be working on cash basis and allows credit to certain customers that too for a very small time period due to which its current assets in the form of debtors, is very less thereby reducing the working capital requirement for the company.</p> <p>(d) Credit Availed : Dev Ltd. must be availing a good credit from its suppliers for a good time period which increases its level of current liabilities in the form of creditors and hence, it requires lesser working capital.</p> <p>(e) Production Cycle : Production cycle is the time span between the receipt of raw materials and their conversion into finished goods. As, Dev Ltd. is a service industry, its production cycle is very small Lesser money is blocked in the productive activities and hence it requires lesser working capital.</p> <p>(f) Availability of Raw Material : The main raw material used by Dev Ltd. is diesel and petrol which is easily available in the market and, hence, it does not have to maintain stock of raw materials due to which its working capital requirements are less.</p>		
25	<p>Beena gave the suggestion of profit sharing.</p> <p>Profit Sharing : The earned profit of a business organization is the outcome of the efforts of two parties, namely owners and employees. The owner invest money and employees provide services to fulfill the objectives. Consequently, the owners get profit in lieu of their investment where as the employees get salary/wages for providing services. Although the employees naturally get their remuneration as a reward of their services yet sometimes they are made part of the profit earned by the company with the hope that they will provide</p>	<p>$\frac{1}{2}$ for each correct suggestion= $1\frac{1}{2} + 1\frac{1}{2}$ for each explanation= $4\frac{1}{2}$</p>	6

	<p>services with full potential, labor and honesty. The plan of profit thus given is known as profit sharing.</p> <p>(iii) Seema gave the suggestion of Job Security</p> <p>Job Security : It is an important non-monetary motivator. Security of job means a feeling of performance and stability. For example, if an employee has a sense of fear or insecurity in his mind that he can be removed from his job any time, he will never work whole heartedly and this worry continues troubling him. On the other hand, if he has a feeling that his job is secure and permanent and he cannot be removed from his job easily, he will work without any worry and with an easy mind. Consequently, his efficiency increases. This is the reason why people prefer a permanent job with less salary to a temporary job with more salary.</p> <p>(iv) CEO gave the suggestion of employee participation : Employees get encouraged to notice their participation in managerial works. Therefore, they offer their full cooperation in making the policies successful prepared with their help.</p>		
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SAMPLE PAPER-3
BUSINESS STUDIES
CLASS-12

MAX. MARKS : 80

General Instructions :

- (i) All questions are **compulsory**.
- (ii) The question paper consist of 6 pages

1	Delhi University decided to issue certificates to students which will carry a security thread, bar code and water mark. Which component of business environment is reflected with this decision?	[1]
2	Kanpur Leather Ltd is a manufacturer of leather products. It produces leather on a large scale and its organizational structure is functional. In the production department, various foremen have been employed. Each foreman has been made responsible for production planning, implementation and control. This has led to a situation of confusion and uncertainty. Suggest a technique of scientific management to Kanpur Leather Ltd which may help it in effective planning and execution.	[1]
3	Which function of management ensures that actual activities confirm to planned activities?	[1]
4	Does the issue of rights issue of shares dilute the control of existing equity shareholders?	[1]
5	Why is dividend decision known as residual decision?	[1]
6	Name the feature of planning which helps managers know whether they have actually been able to attain goals and correct the deviation, if any.	[1]
7	How can the management ensure the survival of the organization?	[1]
8	Decentralization is an extension of which concept?	[1]
9	State any three points of importance of financial planning.	[3]

10	<p>In an organization, all the workers take things easy and are free to approach anyone for minor queries and problems. This has resulted in everyone talking to each other and thus resulting in inefficiency in the office. It has also resulted in loss of secrecy and confidential information leaked out. (a)Which principle do you think the manager should introduce to improve formal communication?(b)What do you think will be the impact of the same?</p>	[3]
11	<p>LokSeva Clinic does not display any information relating to any free medical treatment to BPL (Below Poverty Line) Cardholder, even after the Court's orders. It charges high fee for consultation from its patients and refuses to treat the poor patients. Moreover, the female medical staff does not treat such patients with due care due to insufficient salaries. It also pays attention to the medical representatives and agents of drug manufacturing companies and takes gifts and commission.</p> <p>(a) Which feature of management as a profession is not being followed by the clinic?</p> <p>(b) By quoting the lines, identify the principle of management being violated.</p> <p>(c) In your view, what values are being neglected by the clinic?</p>	[3]
12	<p>Sterlite Industries (India) Ltd provides training from time based to one of the scientific principles of management to make the workers learn the best method of production. This emphasizes that each employee in the organization should be scientifically selected and the work assigned to the employees should suit their physical, mental and intellectual capabilities.</p> <p>(a) Name and explain the principle of scientific management involved in the above situation.</p> <p>(b) Name the principle of scientific management which is concerned with selecting the best way of performing a job through application of scientific analysis and not by intuition or trial and error method.</p>	[3]
13	<p>Gaurav purchased a pack of sweets for his son from a shop in the nearby market. After consuming those sweets, the condition of his son deteriorated and he had to be hospitalized. Later on through a laboratory test, it was certified that the sweets were adulterated.</p> <p>(a) State any one precaution that he should have taken while purchasing the packed sweets.</p> <p>(b) Name the appropriate redressal agency that he can approach in case he decides to file a case against the shop keeper.</p>	[6]

	(c) State any two values which are lacking in the shop keeper.	
14	<p>After finishing her BBA degree course, Tanya gets a job of Assistant Manager in a retail company through the reference of her cousin Taruna who works in the same company as a Senior Manager. Taruna decides to guide Tanya through her experience by making her aware of the important facts about management in practice. She tells her that neither the principles of management provide any ready-made, straitjacket solutions to all managerial problems nor they are rigid prescriptions which have to be followed absolutely.</p> <p>In context of the above case:</p> <p>(a) Identify and explain the two features of principles of management mentioned in the above paragraph.</p> <p>(b) Why do the principles of management not provide readymade, straitjacket solutions to all managerial problems?</p>	[4]
15	<p>During navratras, Varun finalizes a deal to buy a new house. So he visits a nearby branch of “Subh Bank” to withdraw 10 Lakh rupees from his account in order to pay the token money to the seller. In the bank he observes that a large number of customers are present to make cash withdrawals probably because it is an auspicious time to make purchases. After sometime, he overhears one of the bank staff members telling his colleague ,’Today “Subh Bank” is likely to fall short of cash and to make up for the deficit and maintain its cash reserve ratio, it will have to approach another bank’.</p> <p>In context of the above case:</p> <p>(a) Identify the instrument that “Subh Bank” will use to meet its short term requirements of funds.</p> <p>(b) State any three features of the instrument as identified in part (a).</p>	[4]
16	<p>Sudhir is working as a purchase manager in a power sector company .All his subordinates hold him in high regard for his exceptional managerial skill. On the one hand, as a manager he is a tough task master and expects strict compliance to the organisational rules and procedures ,on the other hand he makes aconscious effort to develop rapport with his subordinates by interacting freely</p>	[4]

	<p>with them during the lunch breaks in the cafeteria. Many a times these chit chats helps him to get an insight into the views and opinions of his team members about the policies of the organisation.</p> <p>(a) Identify and explain the two types of organisations that have been discussed in the above para</p> <p>(b) Distinguish between them on the basis of origin, authority and behaviour.</p>	
17	<p>Yash has set up a small scale manufacturing unit for making different varieties of low cost detergents. In order to market his product he has employed a team of five salesmen. Each salesman has been assigned specific areas in the city. He holds a meeting every month for determining the objectives to achieve during the coming month. A sales target is pre-determined for each month which is mutually agreed by both Yash and his sales team. If the salesmen succeeds in reaching this target, a bonus is paid out to all of them along with the monthly salary.</p> <p>In context of the above case:</p> <p>(a) What style of leadership is adopted by Yash? Explain by quoting lines from the paragraph.</p> <p>(b) Name the type of non-financial incentive being offered to the salesmen by seeking their involvement in deciding the monthly targets of the firm.</p>	[4]
18	<p>Srija runs an NGO under the name “Sarthak” in Delhi. The organization is engaged in offering waste paper recycling services to all kinds of institutions in the Delhi NCR region. It also manufactures custom made paper stationery out of recycled paper on order for the interested institutions at a very competitive price. The website of “Sarthak” provides a link to a careers site wherein the people desirous of joining the NGO can use simple Job Search to find the right opportunity for themselves. The NGO also keeps a database of unsolicited applicants in its office so that job seekers may be notified of future opportunities when they arise.</p> <p>In context of the above case:</p> <p>(a) Identify the two sources of external recruitment being used by the NGO “Sarthak” by quoting lines from the paragraph.</p> <p>(b) List any two values that Srija wants to communicate to the society.</p>	[4]
19	<p>Rakesh joins as a Head Librarian of a newly constructed medical college in Pune. A team of four librarians is placed under him for the smooth functioning of the library. Besides, he has been</p>	[4]

	<p>assigned eight people as support service staff. On the second day of his joining, he is told to get a shipment of new books unloaded, stock the book shelves and then get all the waste (packaging, paper etc) disposed of within a week's time. In order to ensure orderliness and speed in the process of setting up of the library, he makes each of the four librarians in charge of five different subjects. Keeping in mind their competence and experience, he decides to give them more authority so that they can make autonomous plans and assume the responsibility for the effective implementation of their decisions.</p> <p>In context of the above case:</p> <p>(a) Identify and explain the concept used by Rakesh keeping in mind the competence and experience of the other librarians.</p> <p>(b) Describe briefly any three advantages of using the concept as identified in part (a) of the question.</p>	
20	<p>Visions Limited is a renowned multiplex operator in India. Presently, it owns 234 screens in 45 properties at 20 locations in the country. Considering the fact that there is a growing trend among the people to spend more of their disposable income on entertainment, two years back the company had decided to add more screens to its existing set up and increase facilities to enhance leisure, food chains etc. It had then floated an initial public offer of equity shares in order to raise the desired capital. The issue was fully subscribed and paid. Over the years, the sales and profits of the company have increased tremendously and it has been declaring higher dividend and the market price of its shares has increased manifolds.</p> <p>In context of the above case:</p> <p>(a) Name and explain the different kinds of financial decisions taken by the company by quoting lines from the paragraph.</p> <p>(b) Do you think the financial management team of the company has been able to achieve its prime objective? Why or Why not? Give a reason in support of your answer.</p>	[5]
21	<p>Anju and Manju are good friends. Considering the fact that the activities involved in managing an enterprise are common to all organizations, after completing their master's in business management, both of them take up a job at managerial level in different organizations as per their</p>	[5]

individual areas of interest. Anju takes up a marketing job in a retail company and strives to increase sales whereas Manju joins an NGO and works diligently to realize its objective related to providing employment to specially abled persons. Both of them have to perform a series of continuous, composite but separate functions. On some days, Anju may spend more time in planning a future display layout and on another day, she may spend time in sorting out an employee's problem. Both Anju and Manju makes conscious efforts to build a feeling of team spirit and coordination among diverse individuals with different needs who work under them. The effect of their management is noticeable in their respective departments as the targets are met according to plans, employees are happy and satisfied, and there is orderliness in its functioning rather than chaos.

In context of the above case:

Identify the various features of management highlighted in the above paragraph by quoting lines from it.

- 22 Deeksha is the General Manager of a firm offering Telemarketing services. Telemarketing is a method of direct marketing in which a representative of the company solicits prospective customers to buy products or services, either over the phone or through a subsequent face to face or web conferencing appointment scheduled during the call. Deeksha ensures that all the call center representatives are well versed with the local languages so that they can interact effectively with the prospective buyers. Moreover, the employees are provided training to improve upon their trouble shooting skills so that they do not spend too much time with every customer. By acquiring these skills, the callers are able to add value to their message and also shorten the call durations, leading to increased customer satisfaction and profitability of the business. [5]
- As a part of the firms' policy, Deeksha encourages women, persons from backward communities and persons with special abilities to assume responsible positions in the organization.
- In context of the above case:
- (a) Identify the type of communication barriers that Deeksha is able to overcome by ensuring that all the call centre representatives are well versed with the local languages.
 - (b) What are the benefits of training employees to an organisation?

	(c) List any two values that the firm wants to communicate to the society.	
23	<p>Differentiate between-</p> <p>(a) Training & Development.</p> <p>(b) Taylor & Fayol.</p> <p>(c) Policy & Rule</p>	[6]
24	Identify the apex institution which lays down the code of conduct for Stock Exchange. Explain its functions.	[6]
25	<p>Well-being Ltd is a company engaged in production of organic foods. Presently, it sells its products through indirect channels of distribution. But, considering the sudden surge in the demand for organic products, the company is now inclined to start its online portal for direct marketing. The Financial Managers of the company are planning to use debt in order to take advantage of Trading on Equity. In order to finance its expansion plans, it is planning to raise a debt capital of ₹40 lakhs through a loan @10% from an industrial bank. The present capital base of the company comprises of ₹9 lakh equity shares of ₹10 each. The rate of tax is 30%.</p> <p>In the context of the above case-</p> <p>(a) What are the two conditions necessary for taking advantage of Trading on Equity?</p> <p>(b) Assuming the expected rate of return to be same as it was for the current year i.e., 15%, do you think the Financial Manager will be able to meet their goal. Show your working clearly.</p>	[6]

SAMPLE PAPER-3

CLASS-12

BUSINESS STUDIES

ANSWER SCHEME

1	Technological Environment	1
2	Functional Foremanship	1
3	Controlling.	1
4	No, as right issue is offered to the existing equity shareholders and their control in the affairs of the company are not diluted.	1
5	Dividend to the equity shareholders is always paid after all payments to rest of the stakeholders including preference shareholders have been made. This is the reason dividend decision is known as residual decision.	1
6	“Planning establishes Standards for Controlling”	1
7	By earning sufficient profits to cover the costs.	1
8	Delegation	1
9	Importance of financial planning (Any three). 1. Facilitates collection of optimum funds. 2. Helps in investing finance in right projects. 3. Helps in fixing most appropriate capital structure. 4. Helps in Operational Activities. 5. Reduces Financial Uncertainties. 6. Base for Financial Control. 7.Helps in proper utilization of Finance.	3

10	(a) Principle of Scalar Chain	1
	(b) Introduction of gang plank in case of emergencies	2
11	(a) The clinic is not following the code of conduct in the medical profession. Code of Conduct: It refers to the set of rules and regulations to be followed by the members of a profession compulsorily while serving the society.	1 1
	(b) Principle violated here is "Equity" as only female staff is getting low salaries. Quoted Lines: "The female medical staff does not treat.....due to insufficient salaries" Principle of Equity: It refers to the Non-discriminatory and impartial treatment or behaviour of the managers while dealing with their subordinates.	
	(c) Values Neglected:	0.5
	<ul style="list-style-type: none"> ▪ Obedience of courts order ▪ Obedience of professional code of conduct ▪ Fulfilment of social responsibilities ▪ Care of unprivileged section of the society 	0.5
12	(a) Development of each and every person to his or her greatest efficiency and ability <ul style="list-style-type: none"> ▪ Employees should be selected scientifically. ▪ Efficient employees produce more to earn more. 	2
	(b) Science, not Rule of Thumb.	1
13	(a) Gaurav should have checked for the quality assurance mark like FPO/FSSAI on its label while purchasing the food product.	
	(b) District Forum	
	(c) The two values which are lacking in the shop keeper are: <ul style="list-style-type: none"> (i) Honesty (ii) Concern for others. 	(c)
14	(a) The two features of principles of management mentioned in the above paragraph are as follows: <ul style="list-style-type: none"> (i) General Guidelines: The principles of management are guidelines to action. Since the real business situations are very complex and dynamic and are a result of many factors, these principles do not provide readymade, straitjacket solutions to all managerial problems. But the importance of principles cannot be underestimated because even a small guideline may help to solve a given problem. (ii) Flexible: The principles of management are not rigid prescriptions which have to be followed absolutely. They are flexible and can be modified by the manager when the situation so demands. They give the manager enough discretion to decide which principle should be used under what circumstances as individual principles are like different tools serving different purposes. 	4
	(b) As the real business situations are very complex and dynamic and are a result of many factors, the principles of management not provide readymade, straitjacket solutions to all managerial problems.	
15	(a) Call money is the instrument used by "Subh bank" to meet its short term requirements of funds.	4
	(b) Three features of call money are as follows:	

	<p>(i) Call money is an instrument through which one bank may borrow money from another bank to maintain the cash reserve ratio as per the guidelines of the RBI.</p> <p>(ii) Its maturity period may be from a single day to a fortnight.</p> <p>(iii) The rate at which the interest is paid on call money is called call rate.</p>																						
16	<p>(a) The two types of organisations are formal & informal discussed in the above paragraph are: Formal Organisation & Informal Organisation.</p> <p>Difference between formal & informal organisations is given below:</p> <table border="1"> <thead> <tr> <th>Basis</th> <th>Formal organisation</th> <th>Informal organisation</th> </tr> </thead> <tbody> <tr> <td>Meaning</td> <td>Structure of authority relationships created by the management.</td> <td>Network of social relationships arising out of interaction among employees.</td> </tr> <tr> <td>Origin</td> <td>Arises as a result of company rules and policies.</td> <td>Arises as a result of social interaction.</td> </tr> <tr> <td>Authority</td> <td>Arises by virtue of position in management.</td> <td>Arises out of personal qualities.</td> </tr> <tr> <td>Behaviour</td> <td>It is directed by rules.</td> <td>There is no set behaviour pattern.</td> </tr> <tr> <td>Flow of communication</td> <td>Communication takes place through chain.</td> <td>Flow of communication has no pattern and can take place in any direction.</td> </tr> <tr> <td>Nature</td> <td>Rigid</td> <td>Flexible</td> </tr> </tbody> </table>	Basis	Formal organisation	Informal organisation	Meaning	Structure of authority relationships created by the management.	Network of social relationships arising out of interaction among employees.	Origin	Arises as a result of company rules and policies.	Arises as a result of social interaction.	Authority	Arises by virtue of position in management.	Arises out of personal qualities.	Behaviour	It is directed by rules.	There is no set behaviour pattern.	Flow of communication	Communication takes place through chain.	Flow of communication has no pattern and can take place in any direction.	Nature	Rigid	Flexible	4
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17	<p>(a) The democratic style of leadership is adopted by Yash. A democratic leader encourages his subordinates to participate in the process of decision making. Thereby, a manager is able to motivate his subordinates to perform their best, as they themselves have set the goals. “ A sales target is pre-determined.....both yash and his sales team”</p> <p>(b) Employee participation is the type of Non-Financial incentive that is being offered to the salesmen by seeking their involvement in deciding the monthly targets of the firm.</p>	4																					
18	<p>(a) The two sources of external recruitment being used by the NGO “Sarthak” are as follows:</p> <p>(i) Web Publishing: “ The website of “Sarthak”the right opportunity for themselves”</p> <p>(ii) Casual Callers: “The NGO also keeps a database...when they arise”</p> <p>(b) The two values that Srijia wants to communicate to the society are:</p> <p>(i) Environment sustainability</p> <p>(ii) Responsibility</p>	4																					
19	<p>(a) Rakesh has used the concept of decentralisation keeping in mind the competence and experience of the other librarians.</p> <p>(b) The three advantages of using decentralisation are as follows:</p> <p>(i) Decentralisation helps to promote self-reliance and confidence among the subordinates: When the subordinates are given freedom to take their own decisions, they learn to depend on their own judgement and develop solutions for the various problems they encounter. Moreover, a decentralisation policy helps to identify those executives who have the necessary potential to become dynamic leaders.</p> <p>(ii) Relief to top management: Decentralisation reduces the need of direct supervision and helps to save the time of top management for pursuing other important work.</p> <p>(iii) Quick decision making: In a decentralised organisation, managers at all levels are allowed to take such decisions independently which lie within their area of jurisdiction.</p>	4																					

	This makes the process of decision making much faster.																									
20	<p>(a) The different kinds of financial decisions taken by the company are as follows:</p> <p>(i) Investment decision: “Two years back the company had...leisure, food chains etc”</p> <p>(ii) Financing decision: “It had then floated an....to raise the desired capital”</p> <p>(iii) Dividend decision: “Over the years, the sales and profits....declaring higher dividend”</p> <p>(b) Yes, the financial management team of the company has been able to achieve its prime objective <i>i.e</i>wealth maximisation of the shareholders by maximising the market price of the shares of the company.</p>	5																								
21	<p>The various features of management highlighted in the above paragraph are stated below:</p> <p>(a) Management is all pervasive: “Considering the fact that the activities involved in....as per their individual areas of interest”</p> <p>(b) Management is a goal-oriented process: “Anju takes up a marketing job...providing employment to specially abled persons”</p> <p>(c) Management is a continuous process: “Both of them have to perform...in sorting out an employee’s problem”</p> <p>(d) Management is a group activity: “Both Anju and Manju makes conscious efforts...who work under them”</p> <p>(e) Management is an intangible force: “The effect of their management....rather than chaos</p>	5																								
22	<p>(a) Deeksha is able to overcome the semantic barriers by ensuring that all the call centre representatives are well versed with the local languages.</p> <p>(b) The benefits of training to an organisation are as follows:</p> <p>(i) Training imparts systematic learning to employees thereby helping to avoid wastage of effort and money. It is considered better than the hit and trial methods.</p> <p>(ii) It increases the employee’s productivity both in terms of quantity and quality leading to higher profits.</p> <p>(iii) Training increases the morale of the employees and reduces absenteeism and employee turnover.</p> <p>(c) The two values that the firm wants to communicate to the society are:</p> <p>(i) Women empowerment</p> <p>(ii) Humanity</p>	5																								
23	<p style="text-align: center;">Difference between training and development</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Basis</th> <th style="text-align: center;">Training</th> <th style="text-align: center;">Development</th> </tr> </thead> <tbody> <tr> <td>Meaning</td> <td>It is a process of increasing knowledge and skills of an employee.</td> <td>It is a process of learning and growth.</td> </tr> <tr> <td>Orientation</td> <td>It is a job-oriented process.</td> <td>It is a career-oriented process.</td> </tr> <tr> <td>Duration</td> <td>It is a short-term process, for a fixed duration.</td> <td>It is a long-term process, which takes place throughout the life of a person.</td> </tr> <tr> <td>Effect/ Objective</td> <td>It enables the employee to perform the job better.</td> <td>It ensures the overall growth of the employee.</td> </tr> <tr> <td>Focus</td> <td>It focuses on technical skills.</td> <td>It focuses on conceptual and human ideas.</td> </tr> <tr> <td>Level of trainees</td> <td>It is meant for supervisors and labourers.</td> <td>It is meant for managerial levels.</td> </tr> <tr> <td>Scope</td> <td>It has a narrow scope.</td> <td>It has a wider scope.</td> </tr> </tbody> </table>	Basis	Training	Development	Meaning	It is a process of increasing knowledge and skills of an employee.	It is a process of learning and growth.	Orientation	It is a job-oriented process.	It is a career-oriented process.	Duration	It is a short-term process, for a fixed duration.	It is a long-term process, which takes place throughout the life of a person.	Effect/ Objective	It enables the employee to perform the job better.	It ensures the overall growth of the employee.	Focus	It focuses on technical skills.	It focuses on conceptual and human ideas.	Level of trainees	It is meant for supervisors and labourers.	It is meant for managerial levels.	Scope	It has a narrow scope.	It has a wider scope.	6
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Comparison between Henry Fayol and FW Taylor

Basis of difference	Henry Fayol	FW Taylor
Prespective	Top level management	Shop floor level of a factory
Unity of Command	Strong proponent	Did not feel important as shown through functional foremanship
Applicability	Universally applicable	Applicable in specialised situations
Basis of formation	Personal experience	Observation and experimentation
Focus	Improving overall administration	Increasing productivity
Personality	Practitioner	Scientist
Expression	Generally theory of administration	Scientific management

S.No.	Policy	Rule
(i)	Policy is a guide to decision-making.	A rule is a guide to human behaviour.
(ii)	It is a general statement which brings uniformity in decision-making.	It is the most specific statement.
(iii)	A policy is subjected to interpretation. In other words, it allows discretion during decision-making.	Rules are rigid in nature and there is no scope for any kind of discretion.

24 The apex institution is SECURITIES AND EXCHANGE BOARD OF INDIA(SEBI).

6

The functions of SEBI are-(explanation needed)

(a)Protective Functions

(b)Regulatory Functions.

(c)Development Functions.

25 (a) Two conditions necessary for taking advantage of trading on equity are-
i)The rate of return on investment should be more than the rate of interest.
ii)The amount of interest paid should be tax deductible.

6

(b) Working note-

Sources	Situation-1	Situation-2
Equit.shares	90,00,000	90,00,000
10%debt	NIL	40,00,000
Total capital Employed	90,00,000	130,00,000
EBIT	13,50,000	19,50,000
Less:interest	-----	4,00,000
EBT	13,50,0000	15,50,000
Less tax@30%	4,05,000	4,65,000
EAT	9,45,000	10,85,000
No of the shares of ₹10 each	9,00,000	9,00,000
EPS	945000/900000=1.05	10,85,000/9,00,000=1.21

Yes the financial manager will be able to meet their goal as per projected EPS. With the issue of debt, it is higher than the present EPS

SAMPLE PAPER

CLASS - XII

M.M : 80.

Time: 3 1/2 hours.

General Instructions:

- (i) Answers to questions carrying 1 mark may be from one word to one sentence.
- (ii) Answer to questions carrying 3 marks may be from 50-75 words.
- (iii) Answer to questions carrying 4-5 marks may be about 150 words.
- (iv) Answer to questions carrying 6 marks may be about 200 words.
- (v) Attempt all parts of a question together.

- Q1. Name the concept, which suggests that only significant deviations which go beyond the permissible limit should be brought to the notice of management. (1)
- Q2. Name the principle of scientific management which emphasises on the study and analysis of methods rather than estimations. (1)
- Q3. Name the function of marketing which is concerned with the cost and location of target market. (1)
- Q4. Name the type of 'organisational structure' which promotes flexibility and initiative. (1)
- Q5. Name the market where companies issue new securities. (1)
- Q6. Hero Ltd's target is to produce 10000 shirts per month at a cost of Rs 150 per shirt. The Production Manager could achieve this

target at a cost of Rs 160 per shirt.

Do you think the Production Manager is effective? Give reason in support of your answer. (1)

Q7. Name and state the aspect of financial management that enables to foresee the fund requirements both in terms of 'the quantum' and 'the timings'. (1)

Q8. Name the incentive which confers ownership rights to employees. (1)

Q9. Rajesh recently joined as the Managing Director of Mega Ltd, an apparel designing company. He observed that the company had a number of experienced fashion designers on its payroll. They regularly offered useful suggestions which were neither appreciated nor rewarded by the company. Instead the company outsourced its services to some renowned fashion designers and paid them a good compensation for their services. Because of this the employees felt disheartened and stopped giving useful suggestions.

(a) Identify the communication barrier discussed above.

(b) State the category of this communication barrier.

(c) Explain any other communication barrier of the same category. (1+1+1=3)

Q10. Explain any three points of importance of Management. (3)

Q11. ABC Crackers Ltd, a fine cracker manufacturing company launched some new products on eve of Diwali in the market, which attracted many buyers. To meet the increased demand, the company employed people from nearby villages where there is a lot of unemployment. Because of the good behaviour of the management with the employees, more and more people wanted to join the company. As the products were in great demand in the market, a competitor imitated the products. The product of the competitor were not accepted by the consumers as it was a status symbol to buy the products of ABC Crackers Ltd. because of their quality.

- (a) Identify and explain the product-related decision because of which consumers preferred the products of ABC Crackers Ltd.
- (b) Also identify any two values which ABC Crackers Ltd. wanted to communicate to the society. $(1+2=3)$

Q12. Principles of Taylor and Fayol are mutually complementary. One believed that management should not close its ears to constructive suggestions made by the employees, while the other suggested that a good company should have an employee suggestion system, whereby suggestions which result in substantial time or cost reduction should be rewarded.

Identify and explain the principles of Taylor and Fayol referred in the above paragraph. $(1\frac{1}{2}+1\frac{1}{2}=3)$

Q13. 'Himalaya Ltd' is engaged in manufacturing of washing machines. The target of the organisation is to manufacture 500 washing machines

a day. There is occupational specialisation in the organisation which promotes efficiency of employees. There is no duplication of efforts in such type of organisation structure. Identify the type of organisation structure and describe any two merits of such organisation. (1+2=3)

Q.14.

Mission Coach Ltd' is a large and creditworthy company manufacturing coaches for Indian Railways. It now wants to export these coaches to other countries and decides to invest in new hi-tech machines. Since the investment is large, it requires long-term finance. It decides to raise funds by issuing equity shares. The issue of equity shares involves huge floatation cost. To meet the expenses of floatation cost, the company decides to tap the money market.

- (i) Name the instrument the company can use for the above purpose.
- (ii) What is the duration for which the company can get funds through this instrument?
- (iii) State any other purpose for which this instrument can be used. (2+1+1=4)

Q.15. The marketing head of an organisation made an exhaustive plan for achieving its sales target. Targets and standards were fixed. However, when the plan was put to test, it was found that the targets set in the plan were impractical. As a result the plan was reprocessed and fresh standards set.

- (a) Identify and explain the management function involved in the process.
- (b) Give any three limitations of such management function. (1+3=4)

Q16. Sunlight Cables, a small cable manufacturing company, was facing a lot of problem in their manufacturing process. It had different functional departments headed by the functional managers. Each department had a goal to achieve. At times, the workers in the production department would get the instructions from the marketing manager as well. This caused a little confusion in the minds of the workers. To discuss the problems, the supervisor directly approached the Managing Director who then called for an inter departmental meeting with the production manager, marketing manager, supervisors and the representatives of the workers from both the departments. By quoting the relevant lines, identify the principles of management followed and violated in the above case. (4)

Q17. Explain briefly any four factors affecting the capital structure of a company. (4)

Q18. Mr. Rajan is the Vice President of a company. He was getting overburdened due to work load. He dispersed the decision-making process to different levels, which not only developed confidence among the employees but also increased their efficiency. Identify and explain the process. Also explain any two points of importance of the above process in the organisation. (2+2=4)

Q19. Ankit had opened an internet cafe in the 90's to cash in on the boom of the internet. In the initial years he got good profits. This made him carefree and he started taking his success for granted. But lately for the last few years, he is finding it

difficult to even bear the expenses of his
cafe.

- (i) Which aspect or feature of business environ-
ment has Rajat ignored?
- (ii) Which changes in the macro environment has
affected his business? (2+2=4)

Q20. Explain briefly Maslow's Need Hierarchy Theory
and also state the assumptions on which it is
based. (5)

Q21. Mediquip Ltd is a company dealing in
distribution of medical equipments. The company
recently imported 15000 units of sugar
testing machines to test the sugar levels
without taking blood samples. For deciding
the market strategy, the CEO of the
company called a meeting of the
marketing heads of different zones.

In the meeting, Sandeep, the North
Zone Marketing head, suggested that since the
machines were sophisticated they need to
visit hospitals personally, explain its working
to the hospital staff personally who would
be using the machines. He also suggested
that additional trained people may be
recruited for the same.

Himanshu, another zonal head, added that
since lot of money had been spent on
the import of the machines, the company
was short of funds to pay to the
additional staff as suggested by Sandeep.

Rahul, a newly appointed zonal Head of south zone suggested that since the size of the order is not large, a detailed study of the factors determining the choice of channels of distribution is required before making the right choice.

(i) Identify the three factors influencing the choice of channels of distribution which were discussed in the meeting.

(ii) Also, explain briefly the other considerations to be taken care of in any two factors identified in part (i). (3+2 = 5)

Q22. Tata International Ltd. earned a net profit of Rs 50 crores. Ankit the finance manager of Tata International Ltd. wants to decide how to appropriate these profits. Identify the decision that Ankit will have to take and also discuss any four factors which will help him in taking this decision. (1+4 = 5)

Q23. Riya purchased one litre of pure Dechi Ghee from a shopkeeper. After using it she had a doubt that it is adulterated. She sent it for a laboratory test which confirmed that the Ghee is adulterated.

State any six reliefs available to Riya, if she complains and the consumer court is satisfied about the genuineness of the complaint. (6)

OR

Explain briefly the six rights of a consumer. (6)

Q24. Planning as a function of management requires application of mind and involves intelligent imagination and sound judgements. It also involves thorough examination and evaluation of different alternatives to choose the most appropriate one.

- (a) Which features of planning are referred to?
(b) Discuss four other features of planning (2+4=6)

OR

Explain briefly the steps in the process of planning. (6)

Q25. Business concerns works in a dynamic environment. The introduction of robotics in the manufacturing process has led to a revolution in the international market. Identifying this and to get the benefit from this, Castle Ltd. decided to introduce it in their production process. But to handle the robots they needed to train their employees. Since the robots were too expensive so they did not want the employees to handle them directly.

- (a) Which method of training should be followed by them and why?
(b) State any three points of importance of training to the employees.
(c) Which values are highlighted here? (1+3+2=6)

OR

Identify the term highlighted in the following cases.

- (i) It aims to create pool of applicants for the job.
(ii) This test measures the ability of the applicant

to learn new skills.

- (iii) Under this method of training, institutes send their students to big industrial houses to gain practical work experience.
- (iv) This method of training aims to familiarize the new employee to the organisation.
- (v) This test is conducted to determine actual skills possessed by the candidate.
- (vi) It aims to determine the number and type of employees required.

(6)

XII - ANSWER SCHEME

1. Management by Exception.
2. Science, not rule of thumb.
3. Market Research
4. Divisional structure
5. Primary or new issue market.
6. Yes, he is an effective manager as he has achieved the target.
7. Financial Planning
8. Co-partnership / stock option.
9. (a) Organisational Policy
(b) Organisational barriers
(c) (i) Rules and regulations
(ii) Organisational facilities (any one)
10. (i) Helps in achieving group goals
(ii) Increases efficiency
(iii) Creates a dynamic organisation
(iv) Achieving Personal objective.
11. (a) Branding
(b) (i) Community Development
(ii) Increase in employment opportunities in rural backward areas.
12. Taylor - Cooperation, Not individualism
Fayol - Initiative. (Principles to be explained)
13. Functional organisation structure
Merits (i) Effective control and coordination
(ii) Improves efficiency
(iii) Avoids duplication
(iv) Ease in training (any two)
14. (i) Commercial Paper (to be explained)
(ii) 15 days to 1 year
(iii) Seasonal and working capital needs.

15. (a) Controlling
- (b) (i) Difficulty in setting quantitative standards
 (ii) Little control on external factors.
 (iii) Resistance from employees.
 (iv) Costly affair (any three)

16. Principles followed
- (a) Unity of Direction - "It had different functional departments - - - - - goal to achieve."
- (b) Initiative - "Managing Director called for an interdepartmental - - - - - both the departments"

- Principles violated
- (a) Unity of Command - "At times, the workers Marketing manager as well."
- (b) Scalar chain - "To discuss the problem - - - - - Managing Director."

17. (i) Cash Flow Position
 (ii) Interest Coverage Ratio
 (iii) Return on Investment
 (iv) Cost of Debt
 (v) Tax Rate
 (vi) Cost of Equity (any four)
 (vii) Floatation Cost

18. Decentralisation (meaning to be explained)
 Importance - (i) Relief to top management
 (ii) Initiative amongst subordinates.

19. (i) Ankit has failed to consider that business environment is dynamic (this feature to be explained)
- (ii) Technological changes. With the advent of laptops, tablets and smart phones, people can access the net easily from their personal gadgets.

20. (i) Basic Physiological Needs (ii) Safety or Security needs
 (iii) Social Needs/Affiliation needs (iv) Esteem Needs.
 (v) Self-actualisation Needs.
 Assumption to be stated.

21. (i) (a) Product Related factor - Product Complexity
 (b) Company Related factor - Financial strength
 (c) Market factor - Quantity purchased / size of the order
 (Points to be explained)
- (ii) (a) Product Related factor - Nature of the product
 (b) Company Related factor - Degree of control
 (c) Market factor - Size of market / No. of buyers

22. (i) Dividend decision
 (ii) factors - (i) Amount of Earnings
 (ii) stability of Earnings
 (iii) Stability of Dividends
 (iv) Growth opportunities
 (v) Cash flow position
 (vi) Taxation policy
 (vii) Shareholder Preference (any four)

23. (i) Removal of Defects (iv) Award of Compensation
 (ii) Replacement of Goods (v) Removal of deficiency in service
 (iii) Refund of price (vi) Discontinuance of unfair / Restrictive Trade Practice.

OR

- (i) Right to safety (iv) Right to be Heard
 (ii) Right to be informed (v) Right to seek redressal
 (iii) Right to choose (vi) Right to Consumer Education

24. (a) (i) Planning is an intellectual process
 (ii) Planning involves decision making

(b) Other features are

- (i) Planning is the primary function of management
 (ii) Planning is futuristic
 (iii) Planning is continuous process.
 (iv) Planning is pervasive

OR

Steps of Planning

- (i) Setting Objectives
- (ii) Developing Premises
- (iii) Identifying alternative courses of action
- (iv) Evaluating alternative courses
- (v) Selecting alternative
- (vi) Implement the plan
- (vii) Follow-up action

25. (a) Vestibule Training
- (b) Importance →
- (i) Increases the efficiency
 - (ii) Source of motivation
 - (iii) Career Growth
 - (iv) Safety of employees
 - (v) Increased earnings (any three)
- (c) Values →
- (i) Care and concern for the employees
 - (ii) Timely decision to cope up with the changing environment.

OR

- (i) Recruitment
- (ii) Aptitude Test
- (iii) Internship training
- (iv) Induction Training
- (v) Trade Test
- (vi) Manpower Planning

Biotechnology

SAMPLE PAPER - I.

CLASS - XII

Section. A - 1 mark each.

3 Hours

70 max
marks.

1. Why forced aeration is done in the fermentor.
2. What is lyophilisation?
3. How is isoelectric focussing different from SDS-PAGE.
4. How microbial cultures can be stored for a long time without affecting its viability?
5. Why is Bt-cotton insect resistant?
6. What are SNPs? Indicate their uses.

SECTION B - 2 marks each.

7. What is the role of growth regulators in tissue culture?
8. Karyotype analysis of cell lines is necessary. Why?
9. What is callus? Write two applications of it.
10. How can cancerous cells detected in a biopsy?
11. What is the mode of action of t-PA. Name one medical application of it.
12. *E. coli* is not preferred host for the expression of a protein produced in papaya. Justify.
13. How are intergenetic somatic hybrid made. Give any one benefit of it.
14. Give two reasons to justify genome sequencing projects?

OR.

Compare structural genomics and functional genomics.

SECTION - C [3 marks each]

15. Write short note on three types of non-covalent bonds in a protein.
16. What is a vector? Enumerate three important features of a bacterial vector.
17. Differentiate between a turbidostat and chemostat. With the help of a graph explain what is a steady state.
18. Why are virus free plants important? How these are made for large scale cultivation?
19. Why CO_2 incubators are required for animal cell culture.
20. Briefly explain the main principle of Sanger's method of DNA sequencing. What modifications are done in ddNTPs for using them in DNA sequencing.
21. With a suitable example indicate how a microbial strain can be improved by any one modern biotechnological method?
22. Mention three methods of gene delivery into animal cells with a brief explanation of their principles.
23. What are edible vaccines? How are they better than conventional methods.
24. Shape of proteins is related to their functions. What happens if proteins are not properly folded.
25. Explain chymotrypsin activity related to charge relay system.

SECTION - D [5 marks each]

26. What is mass spectrometry? Write the basic principle of it. Explain the procedure.
27. Name four major database for with their respective information contents. Name any database retrieval tool and its application.
OR
Explain microarray technique with example.
28. Indicate the principle of Southern hybridization and explain the process.
OR
Explain PCR. Give two applications.

MARKING SCHEME -

SAMPLE PAPER - I

SECTION-A

1. Higher concentration of microbial cells deplete the soluble oxygen in the medium, creating anaerobic condition that cannot be favorable to the growth of microorganism. So forced aeration is done. 1
2. Freeze drying or lyophilisation involves freezing of a culture followed by drying under vacuum, which results in sublimation of cell water. Culture remain viable for 5-10 years of culture. 1
3. IEF, separates protein on the basis of their different pI values. In SDS-PAGE proteins are separate on the basis their size. 1
4. Liquid Nitrogen or by lyophilisation. isolated from *Bacillus thuringiensis*. 1
5. Bt cotton contains CryIIA gene that is resistant to a notorious insect-pest Bollworm. 1
6. Single nucleotide polymorphism.
a) used in population genetics.
b) used in forensic science. 1

SECTION-B

7. Some microorganisms cannot synthesize specific nutrients like amino acids or some vitamins. So growth regulators are added. 2.
8. Karyotyping confirm the species of origin (b) determine the extent of gross chromosomal changes in the line. 2.
9. Callus is an unorganised mass of cell that is parenchymatous in nature. Application (a) Plant regeneration (b) Genetic transformation. 2.
10. Cancerous cell loose contact inhibition and pile on each other due to uncontrolled growth; round in shape. 2.
11. t-PA is a serine protease that catalyses the conversion of plasminogen to plasmin which is responsible for dissolving clots. 2

Plasminogen \rightarrow Plasmin \rightarrow Fibrin $\xrightarrow{+tA}$ $\xrightarrow{\text{degrade}}$ Dissolution of blood clot.

12. *P. falciparum* has eucaryotic gene and *E. coli* is prokaryotic noncoding region has to excised, rprotein may not be secreted, incorrect folding, produces inclusion bodies. (2)
- Downstreaming process is difficult and costly.
13. Protoplast are isolated from two different plants and are allowed to fuse with each other ^{by using PEG} and required hybrid cells are selected. (2)
- Uses: a) Crop improvement (b) Creating new genotypes.
14. a) Provide set of tools for future experimentation. (2)
b) Provide a means for the discovery of all the genes.

OR

15. Structural genomics involves highthroughput DNA sequence followed by assembly, organization and management of DNA sequences. Determines 3-D structure of all proteins.
Functional genomics determines biological function of genes and interaction between genes.

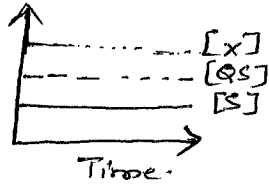
SECTION-C

15. a) Ionic bond (b) Hydrogen bond (c) Van der Waals force. (3)
- Ionic bond - Interaction between oppositely charged groups of a molecule. Also called salt bridges because they are dominant force bond between positively charged and negatively charged ions.
- b) H-bond - Sharing of H atom between two electronegative atoms. Nitrogen and oxygen. bonds are strongest when nuclei of all three involved atoms are in a linear arrangement. Electronegative atoms allow a strong dipole-dipole bond with other very small electronegative elements.
- c) Van der Waals force \rightarrow Atoms at close range. Contact force \propto to surface area in contact. These large surface area results in large total surface area.
16. Vehicle to carry a foreign DNA sequence into a host cell. (3)
- Feature - (a) origin of replication (b) Selectable marker (c) One unique restriction site (d) Small in size.

17. Turbidostat - maintains constant cell concentration.
Chemostat - maintains constant chemical environment.

Steady state - Cell growth and substrate consumption take place at a fixed rate.

Concentration of cells, metabolite and other nutrients remain constant. New biomass is balanced by loss of culture. (3)



18. Virus free plants is important to increase yield and quality of crop plants.
 Axillary meristems are free from viral particles. Small meristems less than 1mm from shoot tips of infected plants are taken and cultured in liquid medium providing all required conditions and regenerated plants to field conditions. (3)

19. CO₂ incubators are used to reproduce the same environmental conditions of the living cells. Maintain the sterility of chamber, constant temp, fixed level of CO₂ and high relative humidity. (3)

20. Sanger's method is used to sequence DNA to get a blue print of life. also called Dideoxynucleotide Chain Termination method.
Principle - A single stranded DNA is required on which DNA polymerase, with the help of primers, extends the chain from 5' to 3' direction. However if 3' OH of a dideoxynucleotide triphosphate is absent as is 2' 3' dideoxynucleotide triphosphate would result that nucleotide being incorporated into a growing chain, but subsequently the chain cannot further be extended as no 3 hydroxyl group is there. (3)

- 21) Microbial strains can be improved by a) Mutant selection or by Genetic engineering or rDNA technology.

Mutation - Example: *Penicillium chrysogenum* are selected for increased penicillin production, each cycle of selection was preceded by mutagen (chemical) treatment. After several cycles of selection, the strain produced was 55% more penicillin than original strain. (3)

22. Using Calcium phosphate HEPES buffered saline solution is mixed with $CaCl_2$ solution containing DNA for transfection. It forms fine ppt of $Ca_3(PO_4)_2$ with DNA. Suspension is added to monolayer of cells. Cells take up $Ca_3(PO_4)_2$ -DNA by endocytosis and express gene. (3)

23. b) Lipofection - Explanation (c) Electroporation or Microinjection -

23. Antigens for a particular disease can be used to express in crop plants. Genes encoding for these proteins can be isolated and transferred to crop plants which are edible are used for immunisation. Advantage 1) Easy delivery system 2) Low cost 3) alleviation of storage problem. (3)

24. Stability, function and expression of protein depends on 3-D structure. Folding of protein can lead to activation or inactivation of proteins. Folding leads to the various structure and function. (3)

25. Chymotrypsin activity → Explain folding of three aa. charge relay system related to activation of enzyme. Serine activity. (3)

SECTION-D

26. Mass Spectrometry → Tool used for protein structural information, peptide mass. Principle - It determines molecular wt. of chemical compounds by separating molecular ions according to m/z ratio. - Diagram from T.B.

Procedure - Protein sample is dissolved in matrix and then laser beam is applied which resulted in the ionization of proteins which are then analysed, charged proteins accelerated through evacuated tubes and separated by m/z ratio. (5)

27. a) BLAST b) Gene level sequences (c) Genome analysis (d) Molecular structure (5)

Database retrieval tool → ENTREZ, TAXONOMY BROWSER, LOCUS LINK.

28. PCR - Denaturation - Annealing - Extension Explanation Diagram. (5)

SAMPLE PAPER - II

SUB - BIOTECHNOLOGY

CLASS - XII

SECTION - A

Time - 3 Hrs.

Max Marks - 70

Q1. Expand PER.

Ans. Protein Efficiency Ratio. Used to measure growth expressed in term of weight gain of an adult by consuming 1g of fixed protein. (1)

Q.2. How is lipofection used to deliver genes into cells?
A - Gene is transferred with the help of tiny vesicles of bipolar phospholipids that fuse with cell membrane releasing DNA into cytoplasm. (1)

3. What are artificial seeds?

A Somatic embryos enclosed in calcium alginate used for rapid and mass propagation of elite species of hybrid plants. (1)

4. State the use of micro carrier beads in animal culture technique. (1)

A Increases surface area. Adherent cells can be used to increase cell density.

5. How is air used in fermenter sterilised? (1)

A. HEPA.

6. What is the role of sucrose in plant medium (1)

A. Sucrose provide C to the medium.

SECTION - B

7. How can unnecessary pollination be prevented and how can be restored back? (2)

Ans: Explain Barnase-Barstar system.

8. How can GM plants tolerate abiotic stress? (2)

Abiotic stress like salinity, drought, temperature affect the crop yield. Transgenic plants have developed by abioverexpressing the genes by the overproduction

of stress-related osmolytes like sugar (trihalose and fructans), certain proteins like antifreeze proteins.

9. Why is *Pichia pastoris* extensively used in industrial fermentation. (2)

A. Has inducible promoters (b) Posttranslational modification
c) fermentation process easy (d) Downstreaming process is easy

10. Why are cryoprotectants added in animal culture. (2)
Freezing is fatal to cells. To minimize the effect of freezing ^{or ice crystals,} glycerol or DMSO is added.

11. What are main drawback of bacterial PHB? Name an alternative method to produce PHB.

A. Drawback - (a) High production cost, (b) Very expensive than Synthetic plastics. Alternative method - Transgenic plants can be used. By introducing three genes involved in PHB synthesis from *A. eutrophus* in their chloroplast, without affecting plant growth. (2)

12. pH ^{produce} → ionic balance (optimal function of cellular enzyme for optimal binding of hormone; growth factors to cell receptors. pH can be maintained by using buffer system. Bicarbonate - CO₂ system. (2)

13. How can SNPs be used?

A. Single nucleotide polymorphism can be used to identify variations in single base [A, T, C, G], 0.2% diff in DNA sequence. (2)

14. Difference between somaclonal and gametoclonal variations.

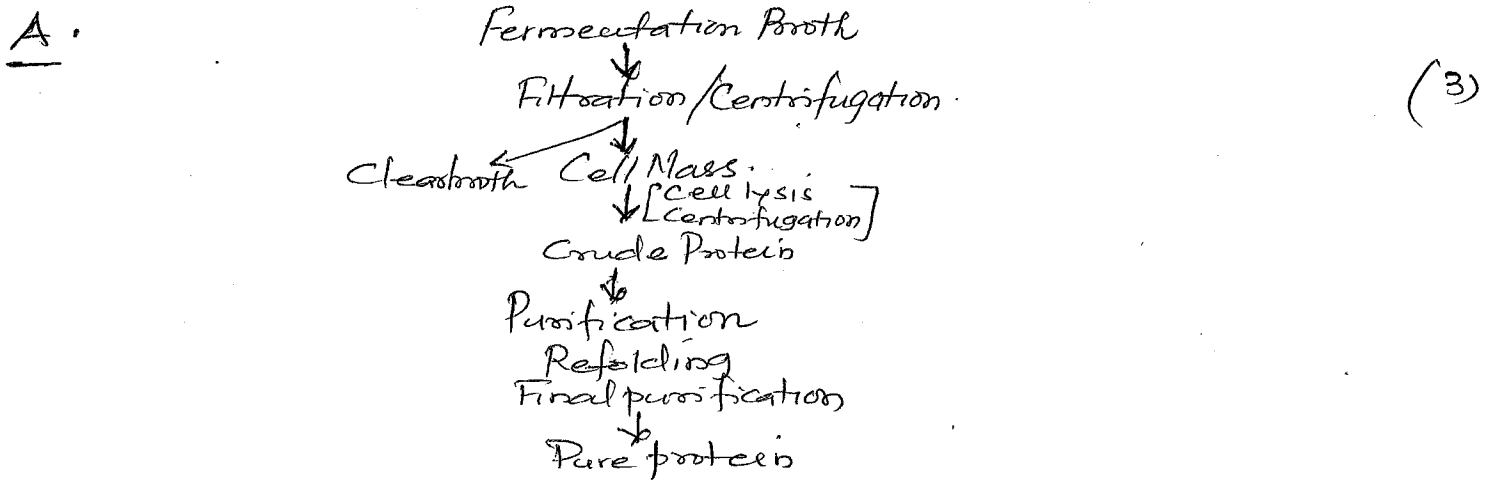
A. Plants regenerated from long-term callus and cell suspension culture associated with chromosomal variation known as somaclonal variation. (2)

If the tissue from which the variants have been obtained is having gametophytic origin such as pollen or egg cell, such variation is called Gametoclonal variation.

19) *Agrobacterium tumefaciens* is regarded as natural genetic engineer comment.

A. Has natural ability to transfer T-DNA of its plasmid into plant genome. Plant chromosome upon infection of cells at wound site and is called natural genetic-engineer of plants. (3)

20) What is down-streaming process? Write the steps of isolation of insulin from microbial metabolite.



21) Why restriction enzyme is called molecular scissor? Explain three classes of restriction endonuclease. (3)

A. Restriction enzyme precisely cut DNA at a specific site so it is called molecular scissors. Endonucleases I, II and III.

22) Enlist the major steps in accepting transgenic crops. List any six of them.

A) a) Cause allergy (b) effect on biodiversity (c) Effect on non-target and insects (d) Cause gene pollution (e) change in evolutionary pattern. f) Safety for human and animal consumption. (3)

23) State the mode of action of erythropoietin.

A. EPO is a glycoprotein hormone that is involved in RBC production and wound healing. EPO increases stimulates the bone marrow to produce more red cells and increase O₂ capacity of blood. (3)

24) a) Write the IUPAC code for.

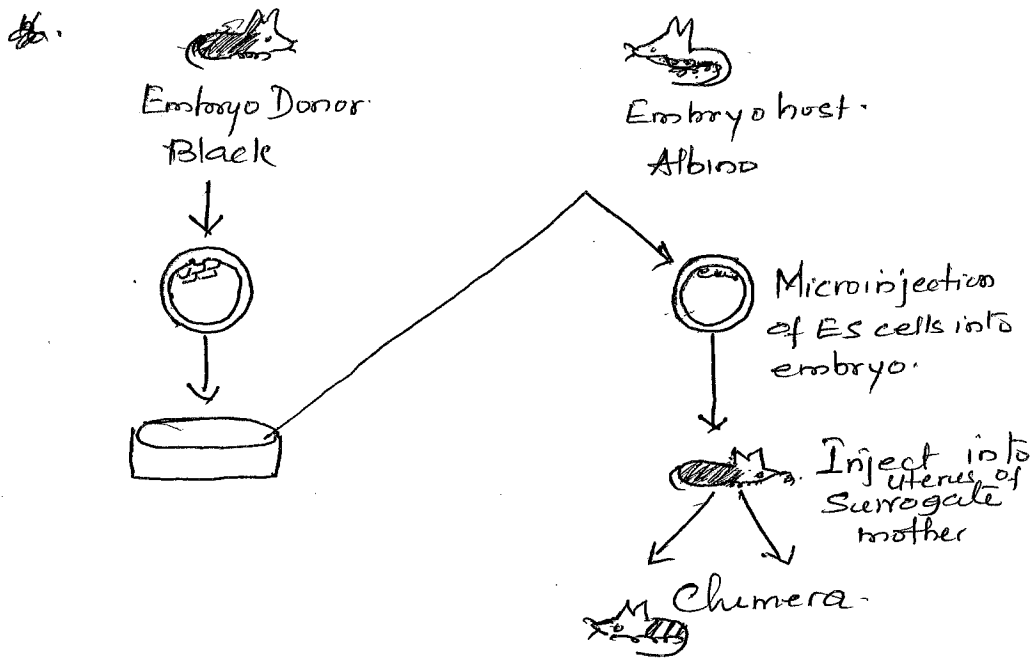
G or C — S (b) Write the complementary sequence (3)

5' A, G, C, S, T, W 3'

3' T, C, G, S, A, W 5'

SECTION - C

15. Outline the process of creation of chimeric mouse by ES cell culture.



(3)

16. State the principle and materials required in Sanger's method.

A) whenever ddNTP comes in DNA synthesis, further synthesis of DNA stops.

- a) Single Strand DNA (b) A primer with free-OH'
- c) DNA polymerase (d) dNTPs (e) ddNTPs (f) Primers,
- g) Gel electrophoresis

(3)

17. State the use of Roller bottle and Spinner flask, A. Both are used ^{for the} scale up of adherent and nonadherent cells.

Roller bottle - cells adhere to the total curved surface area of microcarrier beads, increasing space for growth. Microcarrier beads help grow the cell to high densities.

Spinner culture - For suspension cells. Cells are not allowed to settle at bottom. Cell crowding occurs at very high densities. Stirring the medium improves gas exchange.

(3)

18. Explain various plant regeneration pathways?

Organogenesis and Somatē embryogenesis

↓
Formation of organs form explants

↓
Totipotent cells undergo embryonic pathway to form somatic embryos.

(3)

25. How can we eliminate diseases?

(3)

A. Why protein elevation of tripeptide glutathione in cells. This peptide is a reducing compound and has the property of detoxification of xenobiotics and protection of cellular components from the effect of O_2 intermediates and free radical.

SECTION - D

26. List the six major steps in plant tissue culture.

- Preparation and selection of media.
- Selection of explant.
- Surface sterilization.
- Transfer to sterile suitable medium.
- Regeneration of plants from cultured plant tissue.
- Hardening of regeneration plant/acclimatization.

(5)

Diagram from Text Book.

27. Explain site directed Mutagenesis.

Change in the amino acid sequence of a protein by altering the DNA sequence of the cloned gene.

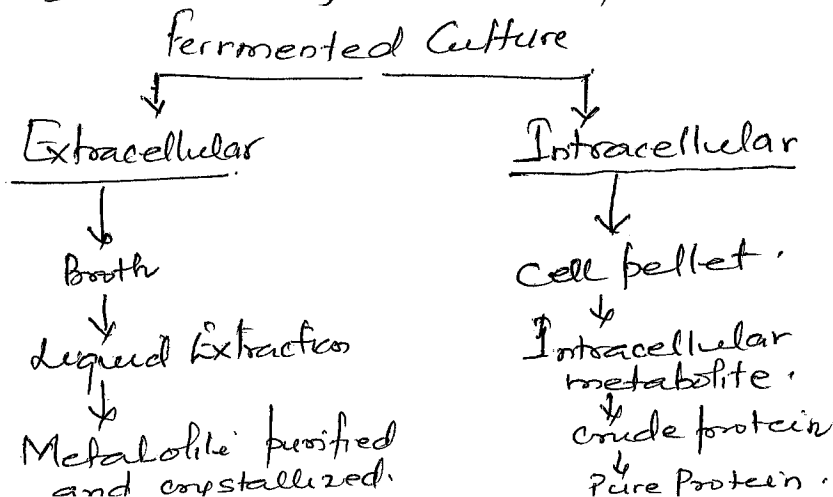
Diagram from text book.

(5)

28) Explain scale up of microbial products and Measurement of Microbial Process.

- Measuring dry weight.
- Absorbance of suspension in a spectrophotometer.

Scale by Downstreaming Process. Explanation.



(5)

