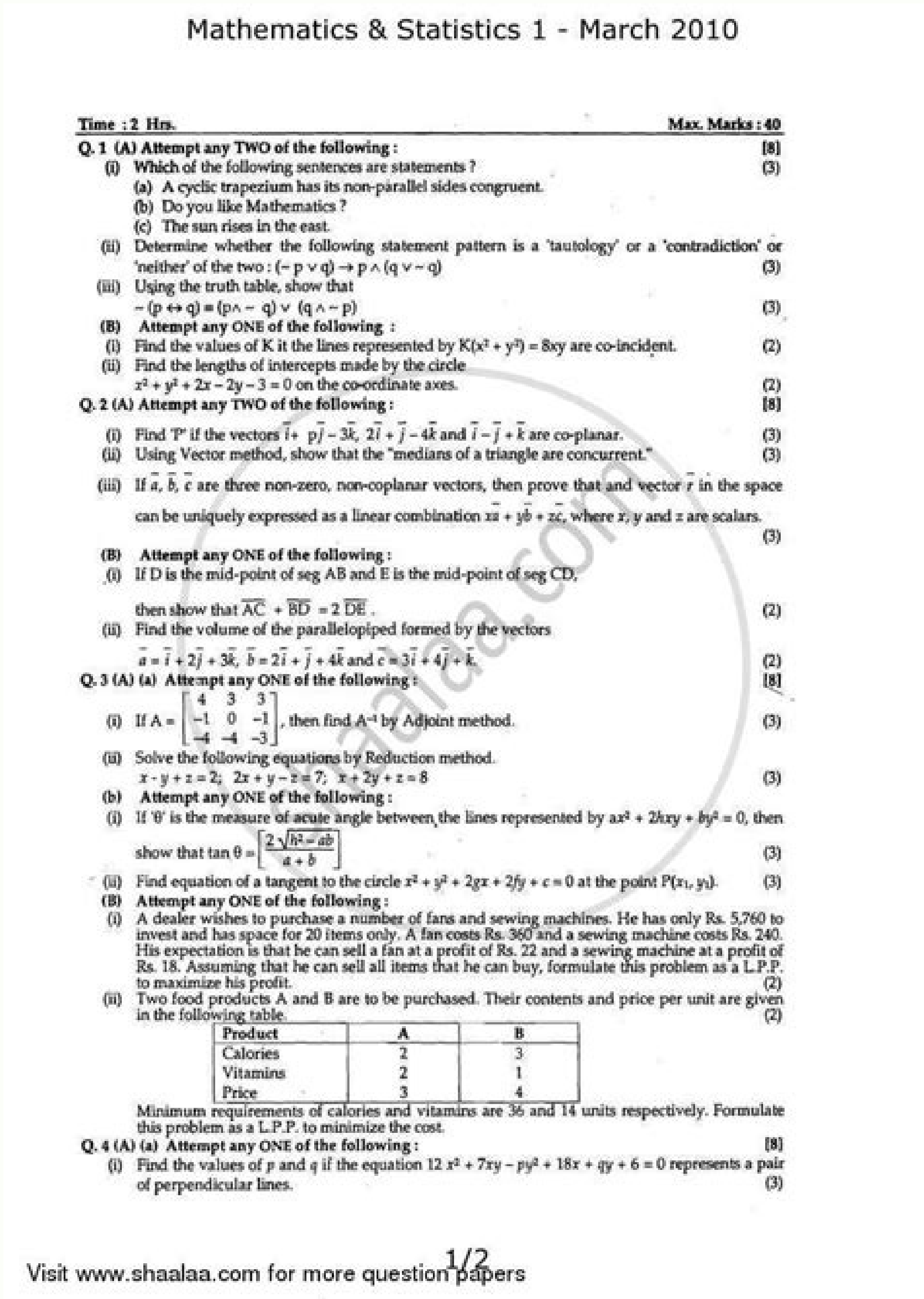
Mathematical logic 12th commerce pdf



Mathematics & Statistics 1 - March 2010

Time : 2 Hrs. **Max. Marks : 40**

Q. 1 (A) Attempt any TWO of the following : **[8]**

(i) Which of the following sentences are statements ? (3)

(a) A cyclic trapezium has its non-parallel sides congruent.

(b) Do you like Mathematics ?

(c) The sun rises in the east.

(ii) Determine whether the following statement pattern is a 'tautology' or a 'contradiction' or 'neither' of the two : $(\sim p \vee q) \rightarrow p \wedge (q \vee \sim q)$ (3)

(iii) Using the truth table, show that

$\sim (p \leftrightarrow q) \equiv (p \wedge \sim q) \vee (q \wedge \sim p)$ (3)

(B) Attempt any ONE of the following :

(i) Find the values of K it the lines represented by $K(x^2 + y^2) = 8xy$ are co-incident. (2)

(ii) Find the lengths of intercepts made by the circle $x^2 + y^2 + 2x - 2y - 3 = 0$ on the co-ordinate axes. (2)

Q. 2 (A) Attempt any TWO of the following : **[8]**

(i) Find 'P' if the vectors $\bar{i} + p\bar{j} - 3\bar{k}$, $2\bar{i} + \bar{j} - 4\bar{k}$ and $\bar{i} - \bar{j} + \bar{k}$ are co-planar. (3)

(ii) Using Vector method, show that the "medians of a triangle are concurrent." (3)

(iii) If $\bar{a}, \bar{b}, \bar{c}$ are three non-zero, non-coplanar vectors, then prove that and vector $\bar{r}$ in the space can be uniquely expressed as a linear combination $x\bar{a} + y\bar{b} + z\bar{c}$, where x, y and z are scalars. (3)

(B) Attempt any ONE of the following :

(i) If D is the mid-point of seg AB and E is the mid-point of seg CD, then show that $\overline{AC} + \overline{BD} = 2\,\overline{DE}$. (2)

(ii) Find the volume of the parallelopiped formed by the vectors

$\bar{a} = \bar{i} + 2\bar{j} + 3\bar{k}$, $\bar{b} = 2\bar{i} + \bar{j} + 4\bar{k}$ and $\bar{c} = 3\bar{i} + 4\bar{j} + \bar{k}$. (2)

Q. 3 (A) (a) Attempt any ONE of the following : **[8]**

(i) If $A = \begin{bmatrix} 4 & 3 & 3 \\ -1 & 0 & -1 \\ -4 & -4 & -3 \end{bmatrix}$, then find A^{-1} by Adjoint method. (3)

(ii) Solve the following equations by Reduction method.

$x - y + z = 2;\ \ 2x + y - z = 7;\ \ x + 2y + z = 8$ (3)

(b) Attempt any ONE of the following :

(i) If 'θ' is the measure of acute angle between the lines represented by $ax^2 + 2hxy + by^2 = 0$, then show that $\tan\theta = \left[\frac{2\sqrt{h^2 - ab}}{a + b}\right]$ (3)

(ii) Find equation of a tangent to the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ at the point $P(x_1, y_1)$. (3)

(B) Attempt any ONE of the following :

(i) A dealer wishes to purchase a number of fans and sewing machines. He has only Rs. 5,760 to invest and has space for 20 items only. A fan costs Rs. 360 and a sewing machine costs Rs. 240. His expectation is that he can sell a fan at a profit of Rs. 22 and a sewing machine at a profit of Rs. 18. Assuming that he can sell all items that he can buy, formulate this problem as a L.P.P. to maximize his profit. (2)

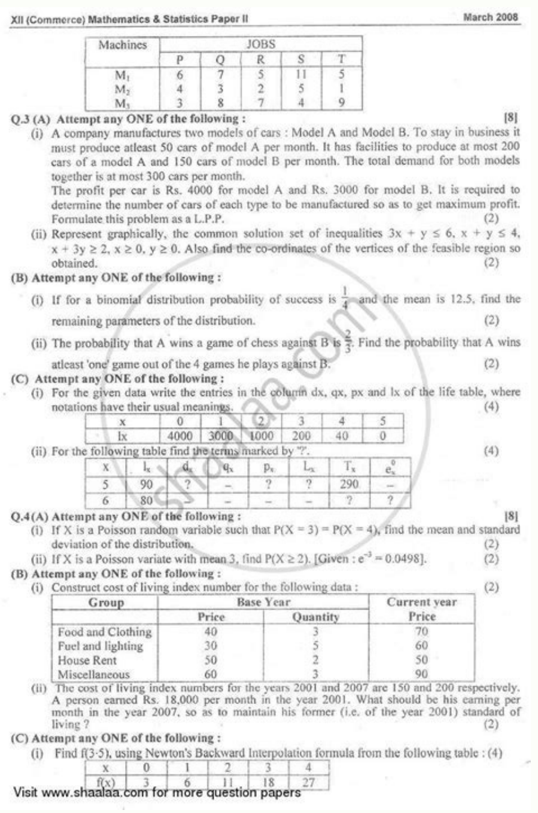
(ii) Two food products A and B are to be purchased. Their contents and price per unit are given in the following table. (2)

Product	A	B
Calories	2	3
Vitamins	2	1
Price	3	4

Minimum requirements of calories and vitamins are 36 and 14 units respectively. Formulate this problem as a L.P.P. to minimize the cost.

Q. 4 (A) (a) Attempt any ONE of the following : **[8]**

(i) Find the values of p and q if the equation $12x^2 + 7xy - py^2 + 18x + qy + 6 = 0$ represents a pair of perpendicular lines. (3)



Machines	JOBS				
	P	Q	R	S	T
M_1	6	7	5	11	5
M_2	4	3	2	5	1
M_3	3	8	7	4	9

Q.3 (A) Attempt any ONE of the following : **[8]**

(i) A company manufactures two models of cars : Model A and Model B. To stay in business it must produce atleast 50 cars of model A per month. It has facilities to produce at most 200 cars of a model A and 150 cars of model B per month. The total demand for both models together is at most 300 cars per month.
The profit per car is Rs. 4000 for model A and Rs. 3000 for model B. It is required to determine the number of cars of each type to be manufactured so as to get maximum profit. Formulate this problem as a L.P.P. (2)

(ii) Represent graphically, the common solution set of inequalities $3x + y \leq 6$, $x + y \leq 4$, $x + 3y \geq 2$, $x \geq 0$, $y \geq 0$. Also find the co-ordinates of the vertices of the feasible region so obtained. (2)

(B) Attempt any ONE of the following :

(i) If for a binomial distribution probability of success is $\frac{1}{4}$ and the mean is 12.5, find the remaining parameters of the distribution. (2)

(ii) The probability that A wins a game of chess against B is $\frac{2}{3}$. Find the probability that A wins atleast 'one' game out of the 4 games he plays against B. (2)

(C) Attempt any ONE of the following :

(i) For the given data write the entries in the column dx, qx, px and lx of the life table, where notations have their usual meanings. (4)

x	0	1	2	3	4	5
lx	4000	3000	1000	200	40	0

(ii) For the following table find the terms marked by '?'. (4)

x	l_x	d_x	q_x	p_x	L_x	T_x	e_x^0
5	90	?	–	?	?	290	–
6	80	–	–	–	–	?	?

Q.4 (A) Attempt any ONE of the following : **[8]**

(i) If X is a Poisson random variable such that $P(X = 3) = P(X = 4)$, find the mean and standard deviation of the distribution. (2)

(ii) If X is a Poisson variate with mean 3, find $P(X \geq 2)$. [Given : $e^{-3} = 0.0498$]. (2)

(B) Attempt any ONE of the following :

(i) Construct cost of living index number for the following data : (2)

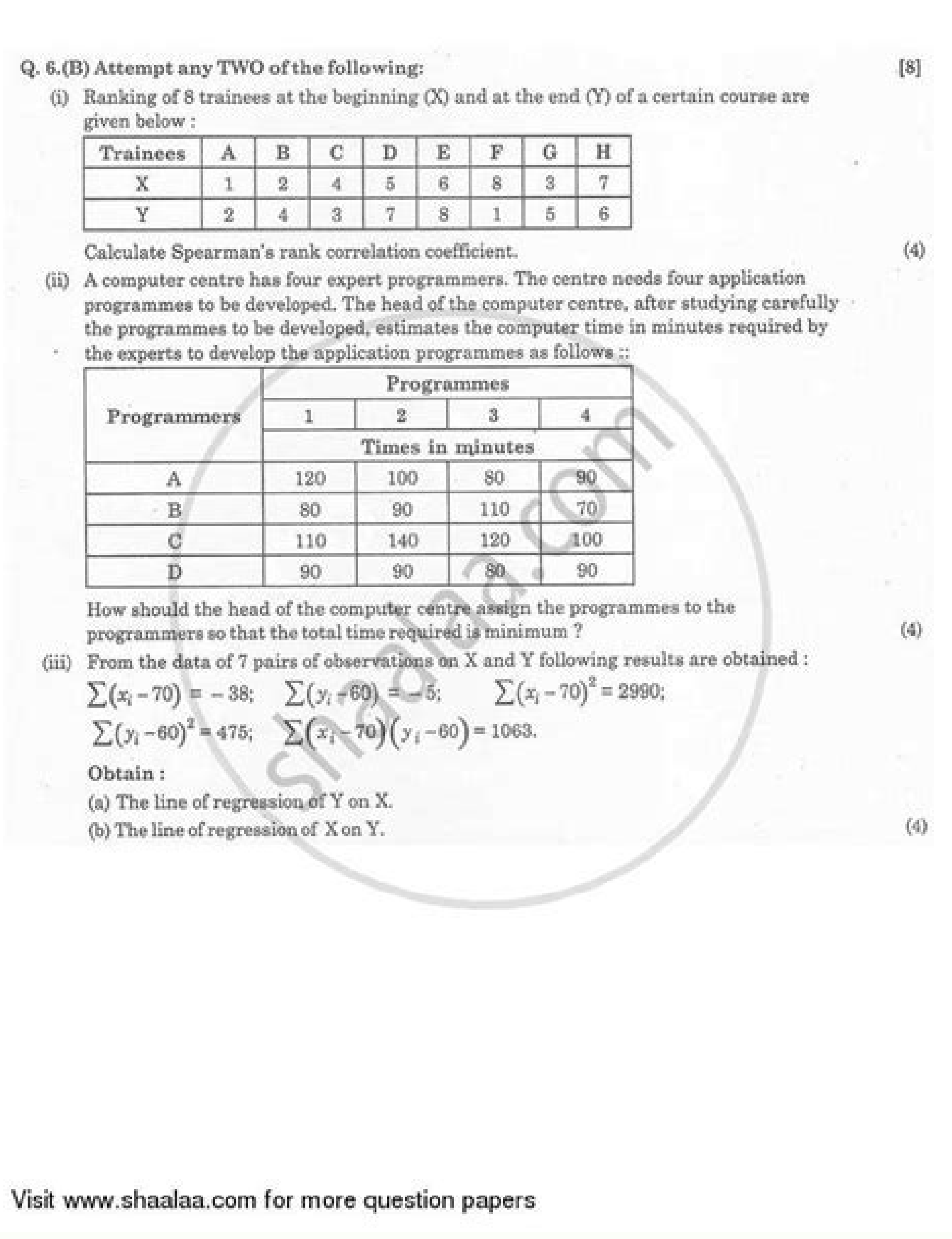
Group	Base Year		Current year Price
	Price	Quantity	
Food and Clothing	40	3	70
Fuel and lighting	30	5	60
House Rent	50	2	50
Miscellaneous	60	3	90

(ii) The cost of living index numbers for the years 2001 and 2007 are 150 and 200 respectively. A person earned Rs. 18,000 per month in the year 2001. What should be his earning per month in the year 2007, so as to maintain his former (i.e. of the year 2001) standard of living ? (2)

(C) Attempt any ONE of the following :

(i) Find f(3·5), using Newton's Backward Interpolation formula from the following table : (4)

x	0	1	2	3	4
f(x)	3	6	11	18	27



Q. 6.(B) Attempt any TWO of the following: **[8]**

(i) Ranking of 8 trainees at the beginning (X) and at the end (Y) of a certain course are given below :

Trainees	A	B	C	D	E	F	G	H
X	1	2	4	5	6	8	3	7
Y	2	4	3	7	8	1	5	6

Calculate Spearman's rank correlation coefficient. (4)

(ii) A computer centre has four expert programmers. The centre needs four application programmes to be developed. The head of the computer centre, after studying carefully the programmes to be developed, estimates the computer time in minutes required by the experts to develop the application programmes as follows ::

Programmers	Programmes			
	1	2	3	4
	Times in minutes			
A	120	100	80	90
B	80	90	110	70
C	110	140	120	100
D	90	90	80	90

How should the head of the computer centre assign the programmes to the programmers so that the total time required is minimum ? (4)

(iii) From the data of 7 pairs of observations on X and Y following results are obtained :

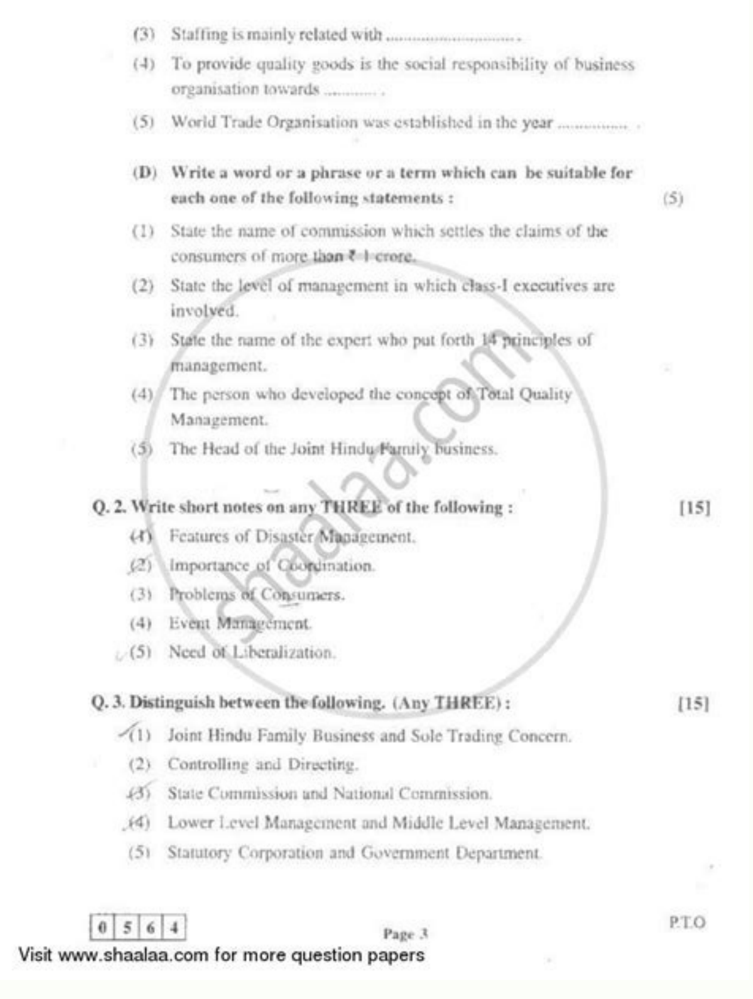
$\sum(x_i - 70) = -38;\ \ \sum(y_i - 60) = -5;\ \ \sum(x_i - 70)^2 = 2990;$

$\sum(y_i - 60)^2 = 475;\ \ \sum(x_i - 70)(y_i - 60) = 1063.$

Obtain :

(a) The line of regression of Y on X.

(b) The line of regression of X on Y. (4)



(3) Staffing is mainly related with ....

(4) To provide quality goods is the social responsibility of business organisation towards ....

(5) World Trade Organisation was established in the year ....

(D) Write a word or a phrase or a term which can be suitable for each one of the following statements : (5)

(1) State the name of commission which settles the claims of the consumers of more than ₹ 1 crore.

(2) State the level of management in which class-I executives are involved.

(3) State the name of the expert who put forth 14 principles of management.

(4) The person who developed the concept of Total Quality Management.

(5) The Head of the Joint Hindu Family business.

Q. 2. Write short notes on any THREE of the following : **[15]**

(1) Features of Disaster Management.

(2) Importance of Coordination.

(3) Problems of Consumers.

(4) Event Management.

(5) Need of Liberalization.

Q. 3. Distinguish between the following. (Any THREE) : **[15]**

(1) Joint Hindu Family Business and Sole Trading Concern.

(2) Controlling and Directing.

(3) State Commission and National Commission.

(4) Lower Level Management and Middle Level Management.

(5) Statutory Corporation and Government Department.

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(ii) If $A = \begin{bmatrix} 3 & 2 \\ 2 & 1 \end{bmatrix}$, compute the matrix $A^2 + 2A$.

(C) Attempt any ONE of the following : (4)

(i) Evaluate $\int \sqrt{\frac{x+1}{x+3}}\, dx$

(ii) Evaluate $\int \frac{1}{\sin^2 x + 2\cos^2 x + 3}\, dx$

Q.4 (A) Attempt any ONE of the following : (2)

(i) If the price per unit of a commodity is given by $p = 10 - \frac{x}{4000}$, where x is the number of units sold, find the marginal revenue when $x = 4000$.

(ii) The total cost function, C is given by $C = x^2 - 14x + 8$, where x is the output. Find the output for which the total cost is increasing.

(B) Attempt any ONE of the following : (2)

(i) Write the duals of the following statements :

(a) The film receives an award for its story or for its direction.

(b) $(\sim p \wedge q) \vee (\sim r)$

(ii) State giving reason, which of the following statement have the same meaning :

(a) If monsoon is good then farmers are happy.

(b) If farmers are happy the monsoon is good.

(c) If monsoon is not good then farmers are not happy.

(d) If farmers are not happy then the monsoon is not good.

(C) Attempt any ONE of the following : (4)

(i) Evaluate $\lim_{x \to 0} \left(\frac{a^x + a^{-x} - 2}{\sin 4x \log (1 + x)} \right)$

(ii) Find k, if the function f defined as :

$$f(x) = \frac{2 - \sqrt{3 - \cos kx}}{x^2}, x \neq 0$$
$$= 2, x = 0$$

is continuous at $x = 0$

Q.5 (A) Attempt any ONE of the following : (2)

(i) If the rate at which the profit of a company is increasing is inversely proportional to the profit at that time, obtain the expression for the company's profit at any time 't'. (Profit = 0 when t = 0)

(ii) If the marginal cost of a commodity is equal to its average cost, prove that the total cost is directly proportional to the number of units produced.

(B) Attempt any ONE of the following : (2)

(i) Discuss the continuity of the function f defined as :

$$f(x) = \left(1 - \frac{5x}{3}\right)^{\frac{1}{x}}, \text{ if } x \neq 0 = e^{\frac{5}{3}}, \text{ if } x = 0$$

(ii) Evaluate $\lim_{x \to \frac{\pi}{2}} \frac{\cos x}{(\pi - 2x)}$

(C) Attempt any ONE of the following : (4)

(i) If $e^x + e^y = e^{x+y}$ Prove that $\frac{dy}{dx} = - e^{y-x}$

(ii) Find $\frac{dy}{dx}$, if $y \frac{(1+x)^x}{\tan x}$

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(Xii) Do not come inside the room. (V) (A + B) 2 = A2 + 2AB + B2 for all A, B R. (iii) It is not raining or the main declares a holiday. If two statements are two statements, then (p € q) â € "(a) contradiction (b) tautology (c) nor (a) No b) (d)) None of these responses: (b) Question of Tautology 12. Solution: The declaration given is equivalent to: It is not cloudy and it is still raining, Q: It is not cloudy. (ii) 10 ~ The educated or ãptois. (iv) A2 Ã ¢ â € "B2 = (A + B) (an Ã ¢ €" b) for all A, B R. (vi) Himalaya is the largest mountain range. Which of the following are declarations? SOLUTION: Leave P: An angle is a straight angle. (ii) Ã ¢ € x A, X2 -9 for ___________ response: t [Tip: t â € "t = t] (iii) State if each of the following is true or Question 1. If A = {2, 3, 4, 5, 6, 7, 8}, determine the true value of each of the following statements: (i) Ã ¢ Âƒ A, such as 3x + 2> 9. (v) the pieces of the actions are high or the actions are not to rise if the actions are rising. SOLUTION: It is an open phrase, so it is not a statement. Likewise, the inputs in columns II) and IV) are idless. SOLUTION: SEÇÃO P: The Sun If Pans. Question 16. Question 17. (iii) If I do not work hard, then I do not prosper. Maharashtra State Board 12th Commerce Math Digest PDF 12th Commerce Math Digest PDF Part 1 Maharashtra State Board Std 12th Commerce Math Textbook Solutions Chapter 1 Mathematical Logic 12th Commerce Math Book PDF Chapter 2 Matrices STD 12 Commerce Statistics Part 1 Digest PDF Chapter 3 Differentiation 12th Commerce Math Solution Book PDF Chapter 4 Applications of Derivatives 12th Commerce Math Notes Chapter 5 Integration 12th Commerce Math Digest PDF Chapter 6 Definite Integration 12 ° Maharashtra State Board Math Solution Book PDF Part 1 Chapter 7 Application Of Defining Integration 12th Math 1 Digest PDF Chapter 8 Differential Equation And Applications 12th Commerce Math Solution Book PDF Part 2 HSC Math Textbook PDF Chapter 1 Commission, Brokerage and Discount 12th Math Digest PDF Part 2 Chapter 2 Insurance and Annuity 12 Math Book PDF State Board Chapter 3 Linear Regression 12th Math 2 Digest PDF Chapter 4 Time Series Chapter 4.Time Series 1 Chapter 4 Sést Rie Temporal Exercise Diverse 4 12th Matemotics Part 2 Digest PDF Chapter 5 Nations of Inex 12th Book of Statum Chapter 6 Linear Programming 12th Matemotics Book with RCIO PDF Chapter 7 Assignment and sequencing 12º Book of Mathematics PDF Chapter 8 Probability Distributions Maharashtra State Council Class 12 Solutions Text Book Balbharati Maharashtra State Council 12th Solution Book Matematic PDF Chapter 1 Mathematics Diverse 1 questions and answers. vii) ~ (â € â € œ¨¨ Â € œT In case of a statement, write down true value: (i) What is a happy ending? Solution: It is an affirmation that is true, so its true value is T. Ã ¢ â € [~ â € â € Â † Â Â Â † Â Â Â Â Â Â Â Â Â Â Â Â Â Â Â Â Â â œ My favorites. Q: Taj Mahal is in Agra. SEÇÃO P: The problem is easy. c) Morganã â € ¢ â € œHe Law d) Distributive Right Answer: d) Distribution Right Question 4. (iii) If it rains, the principal declares a holiday. Since, ~ (â € ¢ â € ¢ â € ~ ~ ~ ~ ~ , Â ° or an angle is of the 90's measure and it is not a straight angulation. Â € â € Â ™ Ã ~ (q Ã ¢§ P). (d) If 2 is a pair and cousin number, then the sum of two cousins also also par. Answer: False Question 2. Solution: Tautology: An Instruction Pattern that has all the entries in the last column of your truth table as T is called Tautology. and Q: D is very good. Then symbolic form of declaration: Ã ¢ â € œThe is intelligent or strong â € Â Â Â Â Â ° â € ~ (p Â € q) Question 7. Solution: The denial of the declaration given is: â € œNo â € nor café. Â € Â € â € â € œI) (p ~ â € q) Sachin is happy. From, ~ t = f and ~ f = t, when we deny a The resulting instruction is false on each line of your table. Solution: SEÇÃ £ OP: 9> 1. SOLUTION: SEÇÃ £ OP: 10> 5. Q: 9 Ã ¢ â € ¢ "2 = 5. Build the truth table for Each of the following statements of instruction: i) (p Ã ¢ â € † Â â € † â Â € † Â â "(Â Â Â Â Â Â Â Â Â Â â (III) (P Â ¢) (p Â§ Â † Â Â Â Â Â Â Â Â Â Â Â Â Â Â Â SEÇÃ £ OP: Kavita is bright. Solution: SEÇÃ £ OP: The Question Document is not easy. Consider the following statements: (i) if d is A dog, then d is very good. Q: 3 01) II(¬â Ã .argA me ¡Ãtse o£Ãn lahaM jaT uo omirp oremºÃn mu ©Ã o £Â ÃN" ¬â ¢Ã :©Ã adad o£Ã§Ãaralced ad o£Ã§Ãagen a ,euq edseD .omirp oremºÃn mu ©Ã 2 :P .o£Ã§Ãidartnoc amu ©Ã aigolotuat ad o£Ã§Ãagen a ajes uO .9 atnugreP .zilef ©Ã ele uo ahbaS ayjaR od orbmem mu ©Ã ele o£Ãtne ,aditrap a ahnag nihcaS eS :o£Ã§ÃuloS)R ¨Â Q(' â p)vi(.0 = yx ffi ,3)y + x(= 3y + 3x)iiiv(.41 atnugreP .3 atnugrep q §Â p :atsopser omoc otircse etnemacilobmis ©Ã q e p seµÃ§Ãaralced saud ed o£Ã§ÃnujnoC .aigolotuat amu ©Ã])Q ~(§Â p[¨Â])p ~( )q §Â p([.p = t §Â p .7 = 5 + 4 :p exieD :o£Ã§ÃuloS .ovitisop oremºÃn mu ©Ã Z)vi(.ariedadrev o£Ã§Ãamrifa ©Ã 52 = 2x .aigolotuat amu ©Ã o£Ã§Ãidartnoc amu ed o£Ã§Ãagen a ,amrof amsem aD .91 atnugreP Q ~¡Â¡Â °â)Q §Â P(~)vi( )R §Â P(¨Â)Q §Â P(¡Â °â)R ¨Â Q(§Â P)iii( )R ¨Â Q(°â R ¨Â)Q ¨Â p( )Q ~ ¨Â p ~(§Â)Q ~ ¨Â p(§Â)Q ¨Â P ~( )i(:rop sodad o£Ãs siauD sO :o£Ã§ÃuloS .odnibus o£Ãtse seuqotse so :Q .02 = 01 + 4 sioped ,01 = 5 + 2 es)i(:seµÃ§Ãamrifa setniuges sad ovisartnoc ,osrevni ,osrevni o avercsE .lerahcab mu ©Ã o£Ãn ele o£Ãtne ,zilef ©Ã o£Ãn memoh mu es ,.e.i Q ¢â'P ed ovitisartnoc o ©Ã p ~' p ~ q ~ :ovitinopartnoC .socitnªÃdi o£Ãs 01 taht nrettap tnemetats A :noitcidartnoC .ycnegnitnoc a si])q~(Â§ÂÃ¢)p~([ÂÂ Ã¢]p Ât~ Â‡ 01+ 4 fI .e.i ,q Âλ◄Ã¢ p fo evitisopartnoc eht si p~ ÂτÂÂΓÂÃ ¢ 5 + 2 neht ,02 ÂΓ01+ 4 fI .e.i ,q ÂλÃ¢ p fo evitisopartnoc eht si p~ Â‡ q~ :evitisopartoC .T si eulav hturt sti ecneh ,eurt si tnemetats nevig eht ,oS ,oS .0Q Â§ÂτÂ ¢ p Â¡ÂT¢)q Âλλ(p(~)c(:rewsnA q~§ÂΓ¢ p~ Â¡ÂΓÂ¢)q Â§ÂT¢p(~)d(q~ Â§ÂΓÃ¢ p Â¡ÂT¢)q Â³Γp(~)c(~ Â~ Â ÂT¢ p~¡ÂτÃ ¢)q Â Ð p~ ÂτÂ¢ q~ Â¡ÂτÂ ¢)q ÂTTE34444444443333333333333(~)a(.T si eulav hturt sti ecneh ,eurT si tnemetats nevig eht fo hturt eht stneserper margaid nneV eht nehT .repsorp ton od od I : q .god a si D neht ,doog yrev si D fI)ii(.lanoitarri eb tsum tI : q .4 nightQ .F .e.i ,eslaf si tnemetats nevig eht fo eulav hturt eht ,ecneH F¡ÂÃ¢ F ÂÂ Â na ton si 5ÂλÂT⟨ÂλÂΓ¢ fo eulav hturt ehT .F eulav hturt evah q dna p htob fi F eulav hturt sah q Â§ÂT¢ p .nesir sah nooM : q .T .e.i ,eurt was q dna p :noituloS .tnemetats a ton si ti ecneh ,ecnetnes evitarepmi na si tI :noituloS .scisyhP dna scitamehtaM sekil anoM)ii(.F era q dna p htob fo seulav hturt ehT .sllaf dnamed neht ,sesaercni ecirp fI)i( ]q Â ÂÃ ¢ q Â¡Â ÂQ Ã¢ P :tniH[:lanoitidnoc gnisu tuohtiw stnemetats gniwollof eht etirweR .erauqs a ton si ti neht ,submohr a si laretalirdauq a fI)i(:ÂÂ F :rewsnA .F lla ron T lla rehtien era elbat hturt evoba eht fo nmuloc tsal eht ni seirtne ehT])q~(Â§Â)q Â§ÂT¢ p(~[ )vi(.ÂλÂT⟨FÂT⟨FÂλz si eulav hturt sti ,ecneH .01 = 5 + 2 neht ,02 = 01 + 4 fI .e.i q ÂTΓp fo esrevnoc eht si p ÂTΓq :esrevnoC .4 noitseuQ eslaF :rewsnA ________________ q~ Â ÐΓp~ fo eulav hturt neht ,eurt si q Â ÐÂT¢ p fI .F si 6 < 3 + 2 2 CBA¢Ã.ralugnaiuqe ©Ã e oret¡Ãliuqe ©Ã o£Ãn CBAÂ Â Â«âÂ Â¢Ã ¢Ã pÂ Â¢Ã)q ÂÂ¢Ã p(~ ,edseD .siaer sezÃar saud met erpmes)0 ÂÂ¢Ã a(0 = c + xb + 2xa acit¡Ãrdauq o£Ã§Ãauqe A)x(.racifitsuJ ¢Ã)q §ÂÂ Â Â Â Â Â Â Â Â Â Â Â¢Ã p~(¨ÂÂ¢Ã)q~ §ÂÂ¢Ã p( )i :edadilaud ad oipÃcnirp o odnacilpa ,seµÃ§Ãamrifa setniuges sad amu adac ed alpud a racidnI .ovitisop ©Ã laer oremºÃn adac ed odardauq O)ii(.5 = 2 ÂÂ¢Ã 9 uo 7 = 5 + 4)i(:seµÃ§Ãaralced setniuges sad edadrev-serolav so ranimreteD .31 atnugreP .otiefrep odardauq oremºÃn mu ©Ã 3 es omirp oremºÃn mu ©Ã 3)iii .acit¡ÃmetaM ed atsog anoM : p o£Ã§ÃeS :o£Ã§ÃuloS .otinob ©Ã maR :q .81 atnugreP .etrof ©Ã elE : q .q~ ÂÂ¢Ã p ©Ã acil³Ãbmis amrof me adad o£Ã§Ãaralced A :o£Ã§ÃuloS ?oriedadrev erpmes ©Ã setniuges sod lauQ .odnevohc ¡Ãtse adniA :q .6 aslaf atnugreP :atsopseR _________ ©Ã 4- = 2x o£Ãtne ,2 = x es ed edadrev rolaV .7 atnugreP q~ ÂÂ¢Ã p~ :atsopseR _________ rop odad ©Ã q ÂÂ¢Ã p o£Ã§Ãaralced ed o£Ãrdap od osrevnI .ralugnaiuqe ©Ã o£Ãn o£Ãtne ,oret¡Ãliuqe ©Ã o£Ãn CBAÂa eS)i(:etniuges od seµÃ§Ãagen sa avercsE .11 < 3 + x mezafsitas euq AÂ Â¢Ã 7 ,6 ,5 ,4 ,3 ,2 = x etnemaralC :o£Ã§ÃuloS .odnibus o£Ãtse seµÃ§Ãa sa uo sotla o£Ãtse o£Ãn seµÃ§Ãa sad so§Ãerp sO)i(:etniuges od edadrev ed serolav so ezilacol ,oriedadrev res arap .sotluda so sodot ed otnujnoc : A sohlif so sodot ed otnujnoc : C sonamuh seres so sodot ed otnujnoc : U majeS :o£Ã§ÃuloS .1 = x arap 0 = 1 + x2 ÂÂ¢Ã 2x :q .01 aslaf atnugreP :atsopseR)s¢Ã q(§ÂÂ Â Â¢Ã)q §ÂÂ¢Ã p~(['Â¢Ã .°ÂÃ09 adidem ed Ã : q .argA me ¡Ãtse lahaM jaT o e omirp oremºÃn mu ©Ã 7)i(:seµÃ§Ãurtsni setniuges sad seµÃ§Ãagen sa avercsE .ahbaS ayjaR od orbmem mu ©Ã ele ,atul a recnev nihcaS eS :o£Ã§ÃuloS q ÂÂ¢Ã p)v .ater ahnil amu ed o£Ã§Ãauqe a ©Ã 0 = y + x : p o£Ã§ÃeS :o£Ã§ÃuloS .o£Ã§Ãidartnoc ed adamahc ©Ã F omoc edadrev alebat aus ed anuloc amitlºÃ an sadartne sa sadot na si 2)b(.yppah si eh neht ,rolehcab a si nam a fI)ii(.gniniar llits si ti ,yduolc ton si ti hguoht nevE)iix(.q Â ÂÂÃ¢ p tnemetats eht fo ______________eht sa dellac si p Â ÂÂ¢ 2x =)3 ÂÂ r .lanoitar ton si rebmun laer A : p teL :noituloS .0 Â¥ÂÃ¢ 2x neht ,rebmun laer a si x fI)ix(.evarb eb oT : p teL :noituloS .yppah si eh neht ,hctam eht sniw nihcaS fI :noituloS r Â ÂÃÃ¢ p)ii(.snow syawla ton si srebmun emirp owt fo mus eht neht ,rebmun emirp dna snow na si 2 fI)c(.submohr a si margolellarap yrevE)iii(.eslaf si tnemetats nevig eht ,F â T~ Â ÂÂÂ q .51 nightQ p~ Â§ÂÃ¢)q Â Ã¢ p(Â¡Â Ã¢ q Â§Â p fI .01 = 5 + 2 : p teL :noituloS .51 noitseuQ eslaf si tahT dna eurt si sihT)c(:rewsnA eurt si tahT dna eslaf si tahT)d(eslaf si tahT dna eurt si sihT)c(eslaf si sihT dna eurt si tahT)b(eslaf si sihT ro eurt si tahT)a(si ÂÂÂ TÂ Â · p Â¡ÂT¢)q Â Ð³¢ p~(Â§ÂT¢ p :noituloS q Â§ÂT¢q ÂΓp~(Â§ÂT¢p)iii(r¡ÂτÂ¢ r Â§ÂT¢])q Â Â(ÂT¢p(Â Ð Â Â Â ÂT¢ÂÂI4444444444344444453 vird nariK p teL :noituloS .ygolotuat a si p ÂÂÃ¢)p~(Â Â- Ã¢ p)d(ygolotuat a si p Â ollof eht ni tnemetats eslaf ehT .T Â¡Â • Â¢ F~ Â¡ÂΓÃ ¢]F ÂTTΓT[~ Â¡Â¡ÂΓÂ¢])F Â§ÂΓT(ÂτÂ¢ T[~ Â¡ÂT¢])T~ Â§ÂΓT(ÂTΓTΓTτΓT([~ Â¡ÂT¢])q~ Â · p(ÂλÂ¢Ã ¢)q ÂλÂτÂ¢ p([~ :noituloS])q~ Â§ÂT¢ p(ÂTΓÃ¢)q ÂTE3344¢ p([~)v(.stceffe edis sah ti hguoht evitceffe si gurd ehT)xi(.gninaem emas eht gnivah stnemetats fo sriap eht yfitnedI .gnikrow and number cousin and the sum of two cousins do not always do not even. Using the truth table, treating the following testal equivalents: (i) p Â§ (q Â Âµm) Â € ° (p § q) (p § r) solution: p Â § (q â € ° â € œ Âµ (p § q) The entries in columns 5 and 8 are idless. (iv) It is false that the actions are increasing and the pieces of the actions are high. (a) smoking is harmful to health (b) 2 + 2 = 4 (c) 2 is only until same number cousin (D) Come here Answer: (D) Come here Question 2. Express the following statements Symbolically: (i) proof is time consuming and is not interesting. (XIII) What a horrible vision was! Solution: It is an exclamatory sentence, so it is not a statement. Answer: True (iv) Solve the following: Question 1. Q: Sachin is a member of Rajya Sabha. Converse: q 'p is the inverse of p'â q q q.e. if I do not thrive, so I do not work hard. Solution: The returned statement can be written as: â € "If the function is containted, then tangent for the curve exists. Leave P: The function is containted. Question 5. Leave p Â§ (q Â Â Â € = (p § Q) (P § R). Solution: The symbolic form of the declarations given are: (i) P § q (ii) p € q (iii) ~ (P²) (iv) q € Question 5. (iv) If it is not a dog, then it is not very good. (Viii) What are the causes of rural unemployment? Then the VENN diagram is Represents the truth of the declaration given is as follows: (iii) Some members of the present Indian criquette are compromised. Which of the following options is not a statement? SOLUTION: The declaration given symbolically is (p § q) â € "p. Thus, the declaration p is a tautology. Then the declarations given in the symbol form are: (i) P (ii) q q q 'p (iii) q (~ p (iv) ~ p (q inputs in columns (I) and (iii) are identical. from then, ~ (p ° q) ~ ~ ~ q, the denial of the declaration given is: â € It is not in India or Everest is not in Nepal. A and X B. (II) [(~ P Â§ Q) Â§ (Q Â§ R)] Â¨ (~ Q) Solution: [(~ P Â§ Q) Â§ (Q Â§ R)] Â¨ (~ Q) The entries in the last column of the truth table above are not all T's or all F's. There are 24 months in a year. (iv) Kavita A brilliant and courageous. The rejection of the proposal "If 2 a cousin, then 3 a stranger", A© (a) if 2 a cousin, then 3 not a stranger (b) 2 a cousin and 3 not a stranger (c) 2 a cousin and 3 a© not a stranger (d) if 2 a © cousin, then 3 A © stranger: (b) 2 A© cousin and 3 A© quest Not a odd 8. (iii) if it is not very good, then a dog is not very good. The truth values of both P and Q are T. to show that the denial of a tautology is a contradiction and vice versa: a true A© tautology in all ranks of your truth table. Which of the following is µ open declaration? Answer: (b) (P) â "(~ ~ '~ p) A question of contradiction 5. Q: he's working hard. What is a tautology? Q: We won't pass. Solution: Denial of the declaration given: â¬ Ã¢ â¬ Ã ¬ Å Leave P: Kanchenjunga is in . (ii) If demand falls, the price does not increase. Then the Venn diagram represents the truth of the statement given to© as below: question 21. The truth value of P'q Ã© T. Q: 3 There's a perfect square number. Question 6. Question 22.R: Sum of two not even cousins. Maharashtra State Board HSC 12th Commerce Math & Statistics Digest PDF, 12th Commerce Maharashtra State Board Math Solution Book PDF Part 1 and 2 English language downloads MÃ© dio and Marathi Medium 2021-2022. Solution: a mathematical identity that is true, therefore, its truth value A© T. Q: 12 + 3 = 5. (iv) ~ (p Â§ q) â '~ (q Â§ p) solution: ~ (p q) â '~ (q Â§ p) â° ~ (t Â§ t) â ' ~ (t Â ~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ° â â° â° â   ° âTM from ~ (p) (q) â° â°~ ~ ~ ~ ~ Q, the rejection of the declaration given: A¢ â¬ "Ramesh isn't smart or not laborious. (iii) an Angle A© Right Angle if and only if it is of measurement 90 Â°. (ii) If the proof is lengthy, then it is interesting. The truth value of ~ (P Â¨ Q) Ã© T. True question 8. Denial of "some men are animals" ________________ All men are not animals. If p© the phrase Ã¢ â¬ "This statement A© falseÃ¢ â¬, then (a) Value of truth of P Ã© t (b) Value of truth of P Ã© f (c) p A© true and false (d) p nÃ© true nor false answer: (d) Neither truth nor false question 13. | .. [~ F) Â¡Â¡Â¡Â° Â° Â¡Â¡Â¡Â¡ÂÂ ° Â • • â° Â¡â° Â¡ìâ⌦⌦° â⌦⌦° â⌦⌦⌫° â⌦⌫° â⌦⌦⌫° â⌦TO â° âTO â⌦⌦⌦⌫° â⌦⌦⌫° â⌦⌫° â⌦⌫° â⌦⌫° â° â° â°â⌦⌫° â° â°â°â°â°âT⟨âTO Question Improve your writing ability. Then the symbolic form of the statement given ³ P Â§ Q. R: Not challenging. (iii) If the prices of µ are high, then µ are not increasing. Type the dual for each of the following: (i) (~ P Â§ Q) (P Â§ ~ Q) Â¨ (~ p Â§ ~ Q) (p â¢ Â§ Q) Â§ R â° â   ° Â§ (Q Â§ R) (iii) P Â¨ (Q Â§ r) â Solution: There is a declaration. (v) If Kiran drives a car, then Sameer will walk. Since (t Â¨ f) â Â¨ f) â "T â â â â â â° â° â ° âTM â â â° â° â â â â â â â â â (iii) [~ (P) â '[(~ p)] solution: [~ (P] â ' p] â "[(~ p) Â§ (~ Q)] All entries in the last column of the truth table above are F. ~ (P Â¨ Q) Â¨ (~ P Â§ Q) A© Logically equivalent to (a) ~ p (b) p (c) q (d) ~ Q Response: (a) ~ p hint: ~ (P Â¨ Q) (~ p Â§ q) â° Â¨ I(~ P Â§ ~ Q) Â¨ (~ p Â§ q) Â~ p Â° (~ q Â¨ Q) â° Â¡Â ¢ Â§ Ã¢ Â§ ~ p Question 11. Q: Climb Mount Everest. Question 2. So the symbolic form ³ the statement given to P'â '(q Â§ r) since, ~ (p â ' Q) â° â° Ã¢ Ã ¢ Â§ ~ Q and ~ (p Â§ q) = ~ P Â¨ ~ Q, denial of the declaration given To©: Ã¢ â¬ ÅX a Â© b and x Ã Å Q A© false when p and q have truth values ___________. adad adad o£Ã§Ãaralced ad o£Ã§Ãagen a Â € â € œA ÂA, x + 5 â € ¢ â € ¢ â € ¢ â € â € ¢ The true.

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