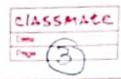


| 7 | NAME: - MUDASIR - LATEEF |
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| _>_ | POII NO: - MCA-21-62 [62]. |
| <u> </u> | CIASS: MCA IST SEM |
| L-> | RE9 No:- 10570121015444. |
| | Cubject: DISCRETE MATHEMATICS. |
| | ASSIGNMENTON: Proposition, logic, touth table, propositional egypticalence, logical equivalence proedicate and guardiffer. |
| | |
| | |



| | Deoposition: |
|--------------------|--|
| | A proposition or Statement is a godanative |
| | A DROPOSITION ON STUTY TOUR ON FAICE BUT |
| | Sondence that is cither true or FAISE, But not both for example three plus tree |
| | mot both 70% extended three 700 eguals |
| | aguals Six" and those plus tree equals |
| | Savan Ora both Statements the firest |
| | Statement is true the Second St is FAISE. |
| | 09 |
| 9 | The SUR DISOS IN THE WOST. |
| (b) B | $\frac{3+4=6}{2}$ |
| (C) (S) | (5.6)C $(7.6.5)$ |
| (D) b _j | Do you Speak Hindi |
| E | $1-x^6=8$ |
| =) | id, board care statements the first is |
| | Falso. Second and this of are true. |
| =) | Dis a question not a declarative Sentence, |
| | Lionce of is not a statement |
| =) | E is a docterative Sentence but not a Statement |
| | Since It is those or False depends on the value |
| | $\phi \propto$. |
| _ | TOUTH TABLES: |
| | 1001K 1431C3. |
| | A truth-lable is a table that Shows the |
| 3 to 1 | trouth value of a compound proposition for |
| | all possible cases, each stadement is true or |
| | Fako in a truth table, each Statement 19 |
| | hybically depresented by a letter or variables |
| | like D, 9,00 g and each Stadement also |
| | has its own corresponding Column. In the toute |
| | -la l la - |

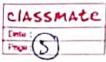
has 1-



| • | Input values: |
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| | latic take the Ctatement of 19 Jaining Outside |
| , | this Chatement which we can represent with the |
| | Variable P 18 21ther tous 00 FAISE. |
| | D= 0110 naining Outside. |
| | The priming them of 10 through 1t 15 mit |
| | naining, them PIS FAISE. |
| | Daining, them PIS FAISE. The megation of a Statement. Called not P. |
| | 95 the Statement that Contradicts P and has |
| 19 | the abbosition trouth value. |
| , | and D - Ot is most organized Outside. |
| | of it is acioung outside then 201 p is fuse |
| _ | if it is not saming out side them not Pistous |
| _ | NEgation (|
| _ | DUP |
| _ | + F |
| _ | FT |
| _ | |
| _ | CONJUCTION = 14 Conjunction is a compound. Statement representing the word and for examp |
| _ | C+0+ement representing the word and for evamp |
| _ | line have the following statements. |
| _ | to be in political Autordo |
| _ | n la James a la Como la Carlanda |
| _ | to consignation of Pand 9, 18 24 18 Daining |
| _ | the Conjunction of P and 9, 18 2t 18 Daining Outside and the football game 18 concerted. |
| _ | this Statement will only be true y both P. and 9 are true; of Dand 9 is FAISE to |
| _ | Day O DOD tore. It Dang q is FAISE to |
| _ | the Conjunction is FAISE. |
| - | the conformation is private |
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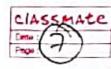
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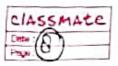
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| lautologies and contradictions: |
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| of compound proposition that is always true. |
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| Colum of 125 trute table. 15 called tautology. |
| A Compound Droposition that is always FAISE |
| for all bossible values. Of its variables or in |
| Other looses contain only Fin the last |
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| Contradiction. (Porg) 1 |
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| Logically Equivalent: | |
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| the case truth value in every possible as | |
| 00 P < >0 TS a tabtology them the propositions | |
| are called logically equivalent or simply. | |
| ed betand by the bound by | |
| D" P.91 = (P. 9) OD P" (P. 9) = (P. 9) | |
| 0+ 10 amount resiminable and sometimes desirable | |
| to deplace a given proposition by an equivalent | |
| Ane. | |
| TO 1051 Whether Two propositions possess panda | |
| are logically equivalent the following Steps are | |
| f 0110002d | |
| (1) Constauct the Touth table for P. | |
| @ Construct the touth table for Q using the | |
| Same propositional variables. | |
| 3) Check Combinations Of trouth values of the | |
| propositional variables to see whether the value of Diff in | 0 |
| De Pis the Same as the truth value of Qif in | |
| Frouth value of Q then P aind Q are logically | |
| 19, 19 vale n. | |
| =) Conditional Dropositioning a Statement | |
| A Conditional Statements are those statements | |
| where a het pothesis that can be woitten in | |
| the form if p then Q" where p and Q | |
| are Santences. For this Conditional Statement | |
| Pis Colled the hypothesis and Q is called | |
| the Conclusion. Intuitively " If P then Q. | |
| 8 + 1 | |



| | IS Called the Conclusion Intuitively y |
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| | BI CONditional STATEMENT: |
| | A Oto-lomont D U may work of 9. Such |
| | Ctalogina and Chid to be bi- Consultioned |
| | Statement and denoted by PE>9,00 PEA |
| | D 9 P >9 |
| | -+ -+ - |
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| (Ì | CONVERSE HE proposition 9 -> P is Called |
| | The converse of P->9. |
| | |
| (1 | I TONG OS E . THE PROPOSITION |
| | the Inverse of P->9. |
| | 100 to a book of 100 to Q -> ND 10 |
| (11) | Contraposition: - the proposition ug -> ~P 18 |
| | Called Contrapositive of P-79. |
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| | made a proposition by either authorizing. a value to the variable or by guartifying. | | | | | | | |
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| | the variable | | 2 0 011 | 0-100 | | | | |
| => | Consider E | P | · 0 75 CAL | 9000 | 10 ~ | - 11 | | |
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