## Nashsa Ghaffen CT-032

Cī-32

Date: \_

Question No 1:

Construct a combinational circuit with three impuls x, y and x and three outputs A, B, and C. Whe the binary input is 0, 1, 2 and 3; the binary output is one greater than the input. When the binary input is 4, 5, 6 or 7, the binary output is two less than the ruput.

| x y z      | A                  | B           | 6      |                  |               |
|------------|--------------------|-------------|--------|------------------|---------------|
| 000        |                    | 0           | 1      | A SHARE TO SHARE |               |
| 001        | 0                  | t           | 0      |                  |               |
|            | 0                  | 1           | 1      |                  |               |
| 0 1 1      | 1                  | 0           | 0      |                  | Beette He     |
| 100        | 0                  | 25-12-12-12 |        |                  |               |
| 101        | MEN THE CO         |             |        | ni-line miles    | Sonx trial of |
| 1 1 0      |                    | HAT IT      | 71-1-1 |                  | CHE LONG      |
| apartial a | THE PARTY NAMED IN |             | 7      | 12               | al baldus     |
|            |                    |             |        |                  |               |

| 1       | 21 24 m 150 mg | (4)   | 335 |
|---------|----------------|-------|-----|
| XY TO 1 | B Z            | xy Zc | 1 ( |
| 00      | 00             | 00 1  |     |
| 07 1    | (01)           | 01    | 1   |
| 11 TR   | 11             | u     | 10  |
| 10      | b CC           | 10    | W   |

| A | T | My + yx   |       |  |
|---|---|-----------|-------|--|
|   |   |           |       |  |
| B | E | えなえ + ダス・ | , sti |  |
|   |   |           | U     |  |
| 1 | = | V-7 + X7  |       |  |

|                | Date:  |
|----------------|--|
| (0:11)         |  |
| Bin o          | Dec 200, 12.0  |
| OD 1           | Diff = zyBin + zyBin + zyBin + zyBin   |
| 9 (1)          | Diff = n (yBin +yBin) + x (yBin + yBin)  |
| y O            | Diff = N ( y ( Bin ) + x ( y ( Bin )  Diff = N ( y ( Bin )   |
| 10 (1)         | 200000000000000000000000000000000000000  |
| duarie a frank | receives at least two ves votes Coast  |
| 191,007        | from K-map:  |
| Bout Bru 0     | Bout = TyBin + Try + yBin  |
| 00 1           | Back = Try + Bin (X + y)   |
| 9 10           | Toda y an A y  |
| 11             | takedbased From Truth Table:   |
| 10             | Bord = Tybin + TyBin + TyBin + xyBin   |
|                | Bood = xyBin + xyBin + xyBin + xyBin   |
|                | Bout = Bin (xy + xy) + xy (Bin + Bin).   |
|                | Bou = Bra (x (x) + 21 (1)  |
|                | Baut = xy + Bion (x (Dy))  |
|                |  |
| x y Bin        |  |
|                | Mark Control of the C |
| 4 4 4          |  |
|                | And the second s |
| 0.1111/2       | Diff.  |
|                |  |
|                | YOU.   |
|                | DXY  |
|                | Bin (NOY) Daut   |
|                | Baut Baut  |
|                | A  |
|                | X(D)   |
|                |  |
|                |  |
|                | X  |
| ge No.         | Relax Copy Teacher's Signature:  |

## Question Number 3:

Page No.

A committee of three individuals decides issues for an organization. Each individual votes either yes or no for each proposal that arises. A proposal is passed if receives at least two yes votes. Construct a circuit that determines whether a proposal passes.

| A · 1 => | Yes (P)            |
|----------|--------------------|
| 0 =>     | NO RCO             |
|          | 00                 |
| ABC      |                    |
| 000      | 0 4 0              |
| 001      | 0 10 0             |
| 010      | 0                  |
| 0 1 1    | 1 R - AB + BC + AC |
| 100      | 0                  |
| 101      |                    |
| 1 1 0    |                    |
|          |                    |
|          |                    |
| ABC      |                    |
|          |                    |
|          | AB I               |
|          | BC S               |
|          |                    |
|          | TAC                |
|          |                    |
|          |                    |
|          |                    |
|          | X                  |

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|        |       |      |      |       |         | 0                |                |      |       |      |        | 0          | 9/1    |     |
|--------|-------|------|------|-------|---------|------------------|----------------|------|-------|------|--------|------------|--------|-----|
| Que    | stion | N    | unib | er 4: | 28      | A                |                |      | 01    | 11   | 76 cm  |            | 4      |     |
|        |       |      |      |       | 50      |                  |                |      |       |      | 14     | 1          |        |     |
| Consta | aet   | a    | B    | CD-t  | 0 - d   | ecin             | ral            | deci | der   | usir | ig the | 2 4        | nw     | sed |
| com    | oina  | tron | s of | the   | BC      | DO               | ode            | on   | don't | ca   | ve con | nau        | tor    | US. |
|        | X     |      |      | 1     | ol      |                  |                |      | X     | - X  |        | 101        | ,      |     |
| A      | В     | c    | D    | Do    | D,      | D.               | D3             | Dy   | Ds    | De   |        | -          |        |     |
| 0      | 0     | 0    | 0    | 100   | 0       | 0                | 0              | 0    | 0     | 0    |        | <u>)</u>   |        |     |
| 0      | 0     | 0    | 1    | O     | 140     | O                | 0              | 0    | 0     | 0    |        | 0 0        | S PLOT |     |
| 0      | 0     | 1    | 0    | 0     | 0       |                  | 0              | 0    | 0     | 0    | 0      |            |        |     |
| 0      | 0     | 1    | (    | 10 ×  | 011     | 0                |                | 0    | 0     | 0    |        | 0          |        |     |
| 0      | 1     | 0    | 0    | 0     | 0       | 0                | 0              |      | 0     | 0    | 0      | 0          |        |     |
| 0      | 1     | 0    | 1    | 0     | 0       | 0                | 0              | 0    |       | 0    | 0      | 0          | 0      |     |
| 0      |       | ol   | 0    | 0     | 0       | 0                | 0              | 0    | 0     | 0    | 0      | 0          | 0      |     |
| 0      | 1     |      | 1    | 0     | 0       | 0                | 0              | 0    | 0     | 0    |        | 0          | 0      |     |
|        | 0     | 0    | 0    | 0     | 0       | 0                | 0              | 0    | 0     | 0    | 0      | lo         | 0      |     |
| 1      | 0     | 0    | 1    | 0     | 0       | 0                | 0              | 0    | 0     | 0    | 0      | 0          | 1      |     |
|        | 0     | LC)  |      |       | S. Gl   |                  | /              |      | X     |      |        | 61         |        |     |
|        | 4. 1  | - 1  |      | 6 11  |         | 1                |                |      |       |      |        | 90         | 4      |     |
| -      | Abbre | MOt  | ea   | Truth | lat     | ste:             |                |      | (0)   | H    | 10 00  |            | 4      |     |
|        |       |      | 1    | /     | 00      | IN CHECK SERVICE | 1 /            |      |       |      |        | 00         |        |     |
|        | A     | B    |      |       | ,       |                  | et (           | 0)   | 1     |      | y y    | 12         |        |     |
| -      | 0     | 0    |      |       | 1       |                  | Do             |      |       | 1.   |        | T.         |        |     |
|        | 0     |      |      | 2     | 8       |                  | D,             |      | X     |      |        | 01         | hij.   |     |
|        | 0     | 0 1  |      |       | (J) (L) | E.               | Dr             |      |       |      | m 64   | <b>(D)</b> | 0      |     |
|        | 0     | 1 (  |      | 0     |         | CHARLE           | D3<br>D4       |      | el ,  |      | P 49   | , ,,,      | 4      |     |
|        | 0     | 1    | 0    |       |         | <u> </u>         | Ds             |      |       |      |        | 199        |        |     |
|        | 0     | 1 %  | 1 1  | 3     | X       |                  | D <sub>6</sub> |      | X     | /    | 1 1    | 0          |        | 1   |
|        | 0     | 13   | 1    |       |         | 1                |                | 77   | 7)    | 7    |        | G]         |        |     |
|        | 1     | 0    | 0 1  | 0     |         |                  | D              |      |       |      |        |            |        |     |
|        | 1     | 0    | 0    |       |         |                  | 08             |      |       |      |        |            | •      |     |
|        | -     |      |      |       | Dq      |                  |                |      |       |      |        |            |        |     |

| 1     |     |    |     | Sept 1 | Date:                                   |
|-------|-----|----|-----|--------|---|
| (Do)  |     |    |     |        | (D <sub>1</sub> )                       |
| AB    | 000 | on | 11  | 10     | AB 00 01 11 10                          |
| 00    | 0   |    |     |        | 6 0                                     |
| D     | and | Pa | 174 | 13     | while a Both to precimal decor          |
| 0     | X   | 义  | ×   | X      | y X X X                                 |
| (0    |     |    | ×   | X      | (o X X                                  |
| (D2)  | a   | 9  | a   | 0      |   |
| 40    | 80  | or | ti  | 10     | M8 (0 00 07 11 10                       |
| 00    | 0   |    | 9   | W      | 000000000000000000000000000000000000000 |
| n     |     |    |     | 0      | 0                                       |
| l o u | X   | X  | X   | X      | II X X X X                              |
| 10    |     |    | X   | (X)    | 10 (x) x                                |
| 0     |     |    | 0   | 1      |   |
| Dy C  | 00  | a  | à   | 10     | Ds CD 000 00 11 10                      |
| 00    |     |    | (0) |        | AD 00 01 11 10                          |
| 9/    | 1   | 1  | 0   | 30     | DO OF OF OF                             |
| 11    | X   | X  | X   | X      | 11 × × × ×                              |
| w     |     |    | X   | X      | 10 × X                                  |
| P6 C  |     |    |     |        |   |
| AB    | 000 | a  | 11  | [0     | D (0 00 01 11 10 00 01                  |
| do    |     |    |     |        | AB OD OI II 10                          |
| a     |     |    |     | 1      | (0)/motor (0)                           |
| 11    | X   | X  | X   | XX     | U X X X X                               |
| 10    |     |    | X   | X      | 10 XXX                                  |
| P8 C  | D   |    |     |        | Da CO CO 11 11 15                       |
| 10    | 000 | OT | 11  | 10     | AB 00 01 11 10                          |
| 0     |     |    |     |        | 00 0 0                                  |
| 0     | 2   | V  |     | 6      | a a a                                   |
| 11    | X   | X  | ×   | X      | u X X X X                               |
| 10    |     |    | X   | 18     | 10 1 1 1 1 1 1                          |
|       |     |    |     |        | 0.00                                    |
|       |     |    |     | W.     |   |

## Equations:

Do = ABCD

D, = ABCO

D2 = BC0

D<sub>3</sub> = BCD

Dy = BCO

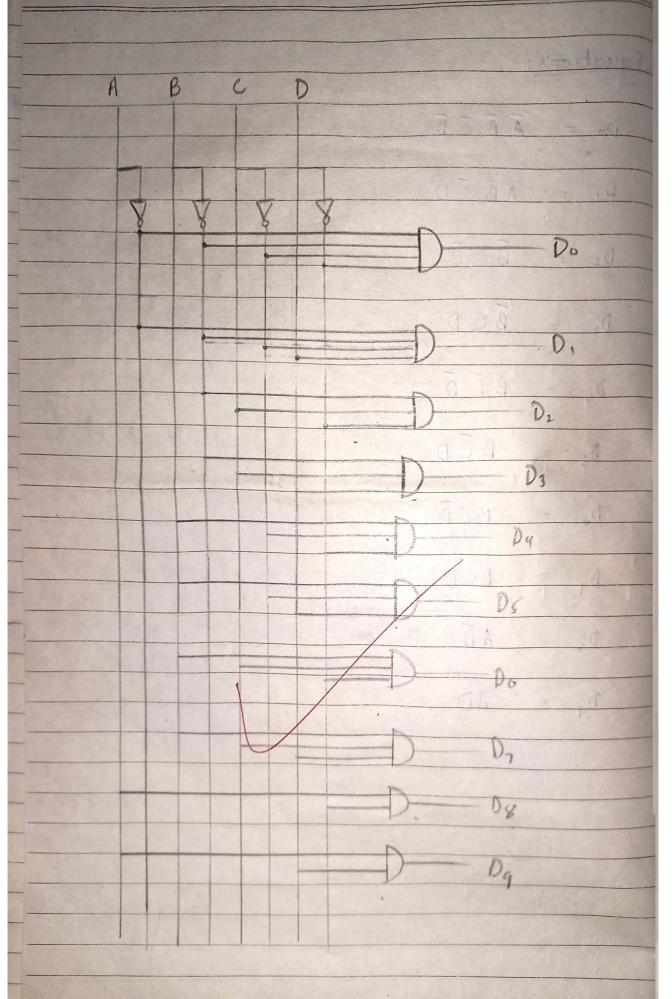
Os = BCD

D6 = BCD

Dy 2 BCD

D<sub>8</sub> = AD

Dg = AD



| Question no S:         |             | Date:  |
|------------------------|-------------|--|
| a: construct a -5-1    | oit parity  | system.  |
| Parity General         | nr:         | 1 223  |
|                        |             |  |
| ABCD                   | Podd Peven  | िस्ट में किए के में के किए के में स्ट के   |
| 00000                  | 1 0         |  |
| 0001                   | 0 01        | 1-(a) (a) (a) (a) (a) (a) (b)  |
| 0010                   | 0 1         |  |
| 0011                   | 10          | (Podd) CD 00 01 11 10  |
| 0100                   | 0 1         | 00 0 0   |
| 0101                   | 10          | 0 0 0  |
| 0110                   | 0 0         | 100  |
| 0 1 1 1                | 0 1         | 10 (0) (0)   |
| 1000                   | 0 1         | ,  |
| 1001                   | 10          | (Brey CD) 03 11 10   |
| 1010                   | 10          | AB 00 07 11 10   |
| 1011                   | 0 1         | <b>a</b>   |
| 1 0 0                  | 10          | 0  |
|                        | 01          | 10 D D D   |
|                        | 1/0         | 0 0 0 0 0  |
|                        |             | and on the order   |
| P                      | A 16 0 1    | 1 0 0 1 0 0 0  |
| Poll = ABCD + ABCD + A | eco de co d | ABCD + ABCD + ABCD + ABCD  |
| - Odd Noch Association | WITHOUT I   | MISCH AREA STORES OF THE STORES  |
| Pos = AB(CD+(D)+       | TB (ED+CD). | + AB(ED+CO) + AB (ED+CO)   |
| A CAMPANDE IN EAST     | MY DA       | A TO THE DESIGNATION OF THE PARTY OF THE PAR |
| Pou = AB (COD) + AB (  | ( ( D ) + A | 3 (COD) + AB (C DD).   |
|                        |             |  |
| Pat = A B (COO)+B      | (COO) + A   | [B((D)+B((D))]   |
|                        |             | - G - 1 )  |
| Pald = A (BACAD)       | A A ( B D   | C ( D)   |
|                        |             |  |
| Pold = AB (BE          | DCOD).      |  |
| D. V.                  | Doloy Con.  | Teacher's Signature:   |
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Peven:

with Generalor:

Peren = ABCD + ABCD

Peren = AB (CD+CD)+AB (CD+CD)+AB (CD+CD)+AB (CD+CD)

Por - AB (COD) + AB (COD) + AB (COD)

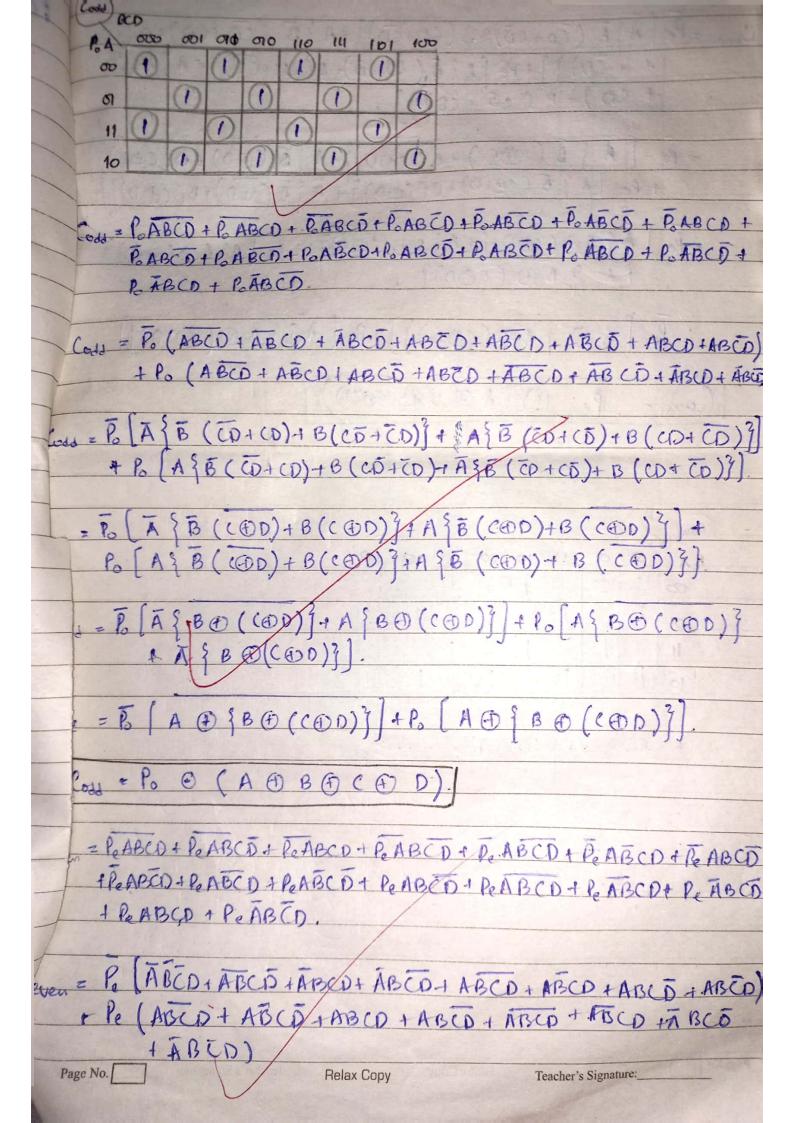
Peren = A (B ( (00) + B ((00)) + A (B ((00)) + B ((00)))

Peven = A (BACDD)+ A (BACDD)

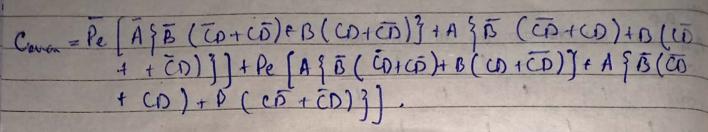
Pever = A D (BD (DD)

Parity Checker:

|  |        |   |     |   |      |        |       |   |   |     |       | No.            |        |
|--|--------|---|-----|---|------|--------|-------|---|---|-----|-------|----------------|--------|
| Pe/Po  | A      | В | C.  | D | Code | Ceven  | PelPo | A | B | C   | D     | Codd           | Ceven. |
| 0  | 0      | 0 | 07  | 0 | Ī    | 0      | 0     | 1 | 1 | 1   | 1.    | 1              | 0      |
| 0  | 0      | 0 | 0   | 1 | 0    | 1      | 1     | 0 | 0 | 0   | 0     | 0              | 1      |
| 0  | 0      | 0 | 1   | 0 | 0    | 1      | ľ     | 0 | 0 | 0   | 1     |                | 0      |
| 0  | 0      | 0 | 1   | 1 | t    | 0      | 1     | 0 | 0 | ala | 0     | 13/19          | 10     |
| 0  | 5      | 1 | (7) | 0 | 0    | 1      | 1     | 0 | 0 | 1   | 1     | 0              |        |
| 0  | 0      | 1 | 0   | 1 | 1    | O      | Va    | 0 | 1 | 0   | 0     |                | 0.0    |
| 0  | 0      | 1 | 1   | 0 | 1    | 0      | 1     | 0 | X | 0   | 1     | 0              |        |
| 0  | 0      | 1 | 1   | 1 | 0    | 1      | 1     | 0 | 1 | 1   | ,0    | 0              | 23/18  |
| 0  | 0      | 1 | 1   | 1 | 9-1  | 1      | 1/    | 0 | 1 | 1   | (     |                | 0      |
| 0  | 1      | 0 | 0   | 0 | 0    |        | /1    | 1 | 0 | 0   | 0     | 21             | 0      |
| 0  | 1      | 0 | 0   | 1 | 1    | 0      | 1     | 1 | 0 | 0   | 1     | 0              | 1      |
| 0  | 1      | 0 | 1   | 0 | 1    | 0      | ,     | 1 | 0 | 1   | 0     | 0              | ALG    |
| 0  | 1      | 0 | 1   | 1 | 0    | 4      | 1     | 1 | 0 | 1   | 1     | 1              | 0      |
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| 0  | 1      | 1 | 0   | 1 | 0    | 1      | 1     | 1 | 1 | 0   | 1     |                | O      |
| 0  | 1      | 1 | 1   | 0 | 0    | 1      | Convi | 1 | 1 | 1   | Celci | ner's Signatur | e: 0   |
| 0  | ge No. |   |     |   |      | Relax  | Сору  | 1 | 1 | 1   | 1     | 0              | 1      |
| The same of the sa |        |   |     |   |      | 000000 |       | 1 | , |     |       |                |        |



| Date: |  |
|-------|--|
| Dave. |  |



= Pe [A @ [B @ (COD)]] + Pe [N @ { D @ (COD)]]

[Ceren = Pe D (ADBO COD)

| Ceva BC  | 3 | OI | 11  | 10  | 110 | 111 | 161 | 100 |     |      |     |     |   |   |     |
|----------|---|----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|---|---|-----|
| RA<br>OD |   | 1  |     | 1   |     | 0   |     |     |     |      |     |     |   |   |     |
| Ø        | 0 | 1  | 1   |     | 0   |     | 0   |     |     |      | 1   | 3   |   | 4 | - 6 |
| 11       |   | 0  |     | 1   |     | 0   |     | 0   | 181 | 1000 | 181 | q d | A | , |     |
| ю        | 0 |    | (1) |     | (1) |     | 0   | 1   |     |      |     | 100 |   |   |     |
|          | a |    | 1   | 0 1 | /   |     | 9%  | 11/ | 4/6 |      |     | 49  | A |   | F   |
|          |   | V  |     | /   | /   |     |     | TH  |     |      |     |     |   |   |     |

