3. (a) Find the binary coded decimal representation of \(-165\).

(b) The two’s complement 8-bit representation of a decimal number is 11110100. What is the decimal number? Show all working.

(c) The ASCII code for the letter A is 41 in hexadecimal. What is the binary representation of the ASCII code for the letter E? Show all working.

Total 10 marks
10. (a) Complete the following trace table using $X = 5$, $Y = 10$ and $Z = 3$ for the following algorithm:

```
. Read X
    Read Y
    Read Z
    X = X + Y
    Y = X + Z
    Z = X + Y + Z
    Print X, Y, Z
```

<table>
<thead>
<tr>
<th>Line</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(b) Consider the following program segment:

```pascal
Readln(salary);
If salary <= 5000 then
  tax := 0
else
  tax := (salary - 5000) * 0.25;
Writeln(tax);
```

Complete the flowchart below by writing appropriate program code from the segment above in the corresponding symbols.

(5 marks)

Total 10 marks
11. (a) State the Pascal data type to store EACH of the following values:

.34.276 .........................................................

-37 ..............................................................

Mango ......................................................... (3 marks)

(b) Each of the following program statements is incorrect. Rewrite each statement using correct Pascal code.

Firstletter := M; ..............................................

Const rate :=0.20; ...........................................

Taxrate := 5%; ................................................

Var scores: array(1..5) of integer; .................

Probability := .35; ....................................... (5 marks)

(c) What type of error would occur when EACH of the following lines of Pascal code are executed?

(i) c = a + b; ..................................................

(ii) d := c/0; ................................................. (1 mark)

(iii) .......................................................... (1 mark)

Total 10 marks