<table>
<tr><td colspan="3">KEMENTERIAN PENDIDIKAN TINGGI
POLITEKNIK MALAYSIA KUCHING SARAWAK
JABATAN MATEMATIK, SAINS DAN KOMPUTER</td><td colspan="2">COURSE CODE/ COURSE NAME</td><td colspan="2">PBM1035 INTENSIVE MATHEMATICS</td></tr>
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<tr><td>CLO2</td><td></td></tr>
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<tr><td>PROGRAMME/ SECTION</td><td>IPP1</td><td colspan="3">TOTAL MARKS</td><td>20 MARKS</td></tr>
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Instructions

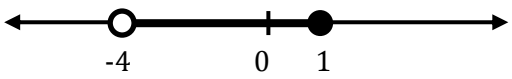
- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

[CLO1, C1]

(a) Write each of the following inequalities in interval notation.

(i)



(ii)

[4 marks]

[CLO1, C2]

(b) Illustrate the following inequalities on the number line.

(i) $-\infty < x < 4$

(ii) $x \geq -3$

[4 marks]

[CLO1, C3]

(c) Solve the following inequality.

$$5(x + 3(1 - x) + 2) \geq 5$$

[2 marks]

Question 2

[CLO1, C1-C2]

(a) Simplify the operations using law of indices.

(i) $2^{\frac{1}{2}} \times 4^{\frac{3}{2}}$

[CLO1, C1]

[2 marks]

(ii) $256^{2x-3} \times 16^{1-x}$

[CLO1, C2]

[4 marks]

[CLO1, C1-C3]

(b) Solve the following equation involving indices.

(i) $9^{x} = 27$

[CLO1, C1]

[2 marks]

(ii) $2^{2n} = 16^{-\frac{3}{4}} \times \left(\frac{1}{4}\right)^{-2}$

[CLO1, C3]

[2 marks]