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|  <p>KEMENTERIAN PENDIDIKAN TINGGI</p> <p>POLITEKNIK MALAYSIA KUCHING SARAWAK</p> <p>JABATAN MATEMATIK, SAINS DAN KOMPUTER</p> | | COURSE CODE/ COURSE NAME | | PBM1035 INTENSIVE MATHEMATICS | |
| | | COURSEWORK ASSESSMENT | | TUTORIAL 3 | |
| | | SESSION | | JUNE 2018 | |
| NAME | | DURATION | 60 MINS | CLO1 | 10 MARKS |
| REGISTRATION NO. | | | | CLO2 | |
| PROGRAMME/ SECTION | IPP1 | | | CLO3 | |
| | | TOTAL MARKS | | | 10 MARKS |

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]

Rewrite each expression as a single exponent.

(a)

$$(2^n \times 8^{2n})^{\frac{1}{n}}$$

(b)

$$\frac{6^2 x^6}{6^5}$$

[2 marks]

Question 2 [CLO1, C2]

Simplify the operations using law of indices.

(a)

$$4^{2x+1}$$

$$\frac{4^{3+x} \times 4^{2+x}}{4^{3+x} \times 4^{2+x}}$$

(b)

$$\frac{7^{2(k+3)} \times 7^{3k+2} \times 7^{2-k}}{49^{5+3k}}$$

[4 marks]

Question 3 [CLO1, C2]

Solve the equations involving indices.

(a) $27^{2x+10} = 9^{3x}(3^{5x})$

(b) $8^{3k} - 64^{5-k} = 0$

[4 marks]