Course .....ANLP8111C-V01.....Unit Lesson.....Exponentiations.....
Subject ……Mathematics……..……Level……Mathayom 2……..……..
Teacher ……..…..
School……..……

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The table of Mathematics Subject Test Analysis….Mathematics…**Level…..**Mathayom 2…

Unit Lesson " Exponentiations "

No.	No. of Indicator	Indicator	Knowledge / Skill						
			Knowledge		Cognitive				
			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
1.	MA 1.1 G.8/1	Understand and apply the property of exponential numbers with integer exponent to solve the mathematical problems in real-life.	-	Multiple Choice 7 Solution2	-	Multiple Choice 1	-	-	10
Total			-	9	-	1	-	-	10

ลงชื่อ .....
ผู้ออกข้อสอบ

ลงชื่อ .....
ผู้ตรวจทาน

Course .....ANLP8112C-V01.....Unit Lesson.....Real Numbers….....
Subject ……Mathematics……..……..……Level……Mathayom 2……..……..
Teacher ……..…..
School……..……..……

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The table of Mathematics Subject Test Analysis….Mathematics…**Level…..**Mathayom 2…

Unit Lesson " Real Numbers "

No.	No. of Indicator	Indicator	Knowledge / Skill						
			Knowledge		Cognitive				
			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
1.	MA 1.1 G.8/2	Understand real numbers and their relationships, and the properties of real numbers to solve mathematical and real-world problems.	-	Multiple Choice 7 Solution 2	-	Multiple Choice 2	-	-	11
Total			-	9	-	2	-	-	11

ลงชื่อ .....
ผู้ออกข้อสอบ

ลงชื่อ .....
ผู้ตรวจทาน

Course .....ANLP8113C-V01.....Unit Lesson.....Polynomials….....
Subject ……Mathematics…….……...……Level……Mathayom 2…….……..
Teacher ……..…..
School…….……..……

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The table of Mathematics Subject Test Analysis….Mathematics…**Level…..**Mathayom 2…

Unit Lesson " Polynomials "

No.	No. of Indicator	Indicator	Knowledge / Skill						
			Knowledge		Cognitive				
			Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	Total
1.	MA 1.2 G.8/1	Understand the operation of polynomials and apply the knowledge of polynomials to solve mathematical problems.	-	Multiple Choice 2 Solution 1	-	Multiple Choice 1	-	-	4
Total			-	3	-	1	-	-	4

ลงชื่อ .....
ผู้ออกข้อสอบ

ลงชื่อ .....
ผู้ตรวจทาน

Midterm Test Semester1/ 2565

School ..... Province .....

Course ..... Subject .....Level .....

Score ..... points Time ..... minutes

<u>Part 1</u> Multiple Choice Tests

<u>Direction</u> Mark X against the correct answer.

<u>Indicators</u>

MA 1.1 G.8/1 Understand and apply the property of exponential numbers with integer exponent to solve the mathematical problems in real-life.

MA 1.1 G.8/2 Understand real numbers and their relationships, and the properties of real numbers to solve mathematical and real-world problems.

MA 1.2 G.8/1 Understand the operation of polynomials and apply the knowledge of polynomials to solve mathematical problems.

1. What is the value of $(0.25)^4 \times \left(\frac{1}{4}\right)^6$? (MA 1.1 G.8/1 Understanding)
   1. $(0.25)^6$
   2. $\left(\frac{1}{16}\right)^{10}$
   3. $\left(\frac{1}{4}\right)^{10}$
   4. $\left(\frac{1}{4}\right)^{24}$

2. Which of the expressions is equivalent to $(81)^{2x}$? (MA 1.1 G.8/1 Understanding)
   1. 3^{6x}
   2. 3^{7x}
   3. 3^{8x}
   4. 3^{2x^4}

3. Which of the following statements is false? (MA 1.1 G.8/1 Analyzing)
   1. $\frac{\left(\frac{1}{2}\right)^6}{\left(\frac{1}{2}\right)^3} = \left(\frac{1}{2}\right)^3$
   2. $\left(3^5\right)^7 = 3^{35}$
   3. $\frac{2^9}{2^5 \cdot 2^2} = 2^2$
   4. $\frac{(2x^2)(3x^3)}{4x^4} = (2 + 3 - 4)x^{2+3-4} = x$

4. What is the value of $\left[\left(4^{-1}\right) \div \left(4^{-2}\right)^{-1}\right]^{-2}$? (MA 1.1 G.8/1 Understanding)

1. 4^2
2. 4^4
3. 4^6
4. 4^8

5. Which of the expressions is equivalent to $\left[\frac{3^3ab^5}{a^2b}\right]^3$? (MA 1.1 G.8/1 Understanding)

1. $\frac{3^6a^3}{b^{12}}$
2. $\frac{3^3b^{12}}{a^3}$
3. $\frac{3^9b^{12}}{a^3}$
4. $\frac{3^6a^9}{b^{12}}$

6. If $3^{x-3} - 3^2 = 18$, what is the value of x? (MA 1.1 G.8/1 Understanding)

1. 2
2. 4
3. 6
4. 8

7. Write 325,000,000 in form of $N_0 \times 10^n$ where n is an integer and $1 \leq N_0 < 10$. Which of the following is correct? (MA 1.1 G.8/1 Understanding)

1. 3.25×10^5
2. 3.25×10^6
3. 3.25×10^7
4. 3.25×10^8

8. What is the value of $\frac{(0.02)^3 \times 10^8}{0.0004 \times 10^4}$ in form of $A \times 10^n$ where n is an integer and $1 \leq A < 10$? (MA 1.1 G.8/1 Understanding)

1. 2×10
2. 2×10^2
3. 3×10
4. 3×10^2

9. What is the value of $\frac{34}{99}$? (MA 1.1 G.8/2 Understanding)

1. $0.\ddot{3}\ddot{4}$
2. $0.3\dot{4}$
3. $0.\ddot{4}\ddot{3}$
4. $0.4\dot{3}$

10. What is the value of $0.25\ddot{4}$? (MA 1.1 G.8/2 Understanding)

1. $\frac{252}{900}$
2. $\frac{252}{990}$
3. $\frac{254}{900}$
4. $\frac{254}{990}$

11. Which of the following expressions is not a rational number? (MA 1.1 G.8/2 Analyzing)

1. 0.999…
2. $-\sqrt{9}$
3. $\frac{1}{\sqrt{3}}$
4. 0

12. Which of the following expressions is an irrational number? (MA 1.1 G.8/2 Analyzing)

1. 3.414
2. $\frac{22}{7}$
3. 2.121212…
4. $\sqrt{20}$

13. What is the value of $\sqrt{36} + \sqrt{80} + \sqrt{45} - \sqrt{125}$? (MA 1.1 G.8/2 Understanding)

1. $1 - 2\sqrt{5}$
2. $1 + \sqrt{5}$
3. $6 + 2\sqrt{5}$
4. $6 - \sqrt{5}$

14. What is the value of $\sqrt{(-3)^2 + (\sqrt{6})^2 + (-\sqrt{10})^2}$? (MA 1.1 G.8/2 Understanding)

1. 0
2. 5
3. $\sqrt{17}$
4. $\sqrt{89}$

15. What is the solution of the solution $\sqrt{2 - \sqrt{3 - x}} = 1$? (MA 1.1 G.8/2 Understanding)

1. 0
2. 1
3. 2
4. 3

16. What is the value of $\sqrt[3]{-10,648} \times \sqrt[3]{-\frac{1}{8}} + 2\sqrt{121}$? (MA 1.1 G.8/2 Understanding)

1. 0
2. 1
3. 11
4. 33

17. If $\sqrt[3]{3x^2 - 22} = 5$, what is the value of x? (MA 1.1 G.8/2 Understanding)

1. 3
2. 4
3. 7
4. 8

18. Which of the following is not a polynomial? (MA 1.2 G.8/1 Analyzing)

1. $2x^0 - 1$
2. a+b + c
3. $(x - y + z)^2$
4. $\frac{a}{b} + \frac{b}{c} + \frac{c}{a}$

19. Which of the following is the simplify of $\left(x^4 + 9x^2 - 3\right) - \left(2x^3 + 9x^2 + 3\right)$? (MA 1.2 G.8/1 Understanding)

1. $x^4 - 2x^3 - 6$
2. $x^4 + 2x^3 - 9$
3. $x^3 + 18x^3 + 6$
4. $x^4 - 2x^3 + 18x^2 - 6$

20. Which of the following is the simplify of $x^2(2 - x) - [2x - (x - 2)]$? (MA 1.2 G.8/1 Understanding)

1. $-x^3 - 2x^2 - x + 2$
2. $-x^3 + 2x^2 - x + 2$
3. $-x^3 - 2x^2 + x + 2$
4. $-x^3 + 2x^2 + x + 2$

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Part2 Solution Questions

Direction Find the answers to the questions below.

1. Simplify $\frac{xy^5z^2 \times x^2yz^3}{x^4y^3z^2}$. (MA 1.1 G.8/1 Understanding)

Solution

$\frac{xy^5z^2 \times x^2yz^3}{x^4y^3z^2} = \frac{x^{1+2}y^{5+1}z^{2+3}}{x^4y^3z^2} = \frac{x^3y^6z^5}{x^4y^3z^2}$

$= x^{3-4}y^{6-3}z^{5-2} = x^{-1}y^3z^3 = \frac{y^3z^3}{x}$ ANS

2. Find the value of $\left[\frac{\left[(-8)^{-1}\right]^2 \times \left(4^{-2}\right)^2}{16^{-3}}\right]^{-1}$. (MA 1.1 G.8/1 Understanding)

Solution

$\left[\frac{\left[(-8)^{-1}\right]^2 \times \left(4^{-2}\right)^2}{16^{-3}}\right]^{-1} = \left[\frac{\left[(-8)^{-1x2}\right] \times \left(4^{-2x2}\right)}{16^{-3}}\right]^{-1}$

$= \left[\frac{(-8)^{-2} \times (4)^{-4}}{16^{-3}}\right]^{-1}$

$= \left[\frac{(-8)^2 \times (4)^4}{16^3}\right]$

$= \left[\frac{[(-2)^3]^2 \times [(2)^2]^4}{(2^4)^3}\right]$

$= \left[\frac{(-2)^6 \times (2)^8}{(2)^{12}}\right]$

$= 2^{6+8-12} = 2^2 = 4$ ANS

3. If x = 4, y = 3, what is the value of $\sqrt{0.16x^2y^4}$? (MA 1.1 G.8/2 Understanding)

Solution

x = 4, y = 3

$\sqrt{0.16x^2y^4} = \sqrt{0.16(4)^2(3)^4}$

$= 0.4 \times 4 \times (3)^2$

$= 14.4$ ANS

4. Solve $\sqrt{2x-3} = \sqrt{x+4}$. (MA 1.1 G.8/2 Understanding)

…Solution……

……$\sqrt{2x-3} = \sqrt{x+4}$……

……$(\sqrt{2x-3})^2 = (\sqrt{x+4})^2$ ……

…… 2x - 3 = x + 4……

……2x - x = 4 + 3……

…… x = 7 ANS……

……

5. Simplify $(-4y^2 + 3y - 2) - (-2y^2 + 2y - 1)$. (MA 1.2 G.8/1 Understanding)

…Solution……

……$(-4y^2 + 3y - 2) - (-2y^2 + 2y - 1)$……

……$= (-4y^2 + 2y^2) + (3y - 2y) + (-2 + 1)$

……$= (-2y^2) + (y) + (-1)$

……ANS……

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