KINGDOM OF SAUDI ARABIA		المملكة العربية السعودية
Ministry of Education		وزاره التعـــــليم
Jazan University		جامعــة جـــــازان
Faculty of Science		كلية العـــــلوم
Department of *Mathematics*		قسم الرياضـــــيات

الاختبار الفصلي الأول الفصل الدراسى الأول العام الجامعي 1440 – 1441 هـ

اسم الطـــــــــــــالب : ....   الرقم الجامعي : ....

اســـــم المــقـــرر: الرياضيات العامة   رمز المقرر : 101 ريض- 3

الوقت المسموح : ساعة   اليوم : الاحد   التاريخ : 13 / 10 / 2019 م

Question 1: Choose the correct answer: ⬭ 10 ⬭   السؤال الأول: أختر الإجابة الصحيحة:

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(1) The additive inverse of $-\dfrac{3}{4}$ is ....   **(1) المعكوس الجمعي لـ $-\dfrac{3}{4}$ يكون ....**

(A) $-\dfrac{3}{4}$ (B) $\dfrac{3}{4}$ (C) $-\dfrac{4}{3}$ (D) $\dfrac{4}{3}$

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(2)Evaluate: $\left(\dfrac{5}{2}-3\right)^{-1}=$ ....   **(2) قيم (اوجد قيمة): $\left(\dfrac{5}{2}-3\right)^{-1}=$ ....**

(A) $\dfrac{1}{2}$ (B) $-\dfrac{1}{2}$ (C) -2 (D) 2

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(3) Simplify using exponents properties: $(2a^3)(a^{-5})(4a^2)=$ .....

(3) بسط باستخدام خصائص الأسس: $(2a^3)(a^{-5})(4a^2)=$ ....

(A) 8 (B) $8a^3$ (C) $8a^2$ (D) $8a^{-5}$

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(4) Evaluate: $(-16)^{\frac{1}{2}}=$ ....   **(4) قيم (اوجد قيمة): $(-16)^{\frac{1}{2}}=$ ....**

(A) ± 4 (B) -4 (C) 4 (D)is not real

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(5)simplify: $\left(2x^3+4x^2-3x\right)+\left(x^3-2x^2+3\right)-\left(3x^3+2x^2-3x\right)=$ ....

(5) بسط: $\left(3x^3+2x^2-3x\right)-\left(x^3-2x^2+3\right)+\left(2x^3+4x^2-3x\right)=$ ....

(A) $3x^3+3$ (B) $6x^2+3$ (C) $6x+3$ (D) 3

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(6) Factor: $x^3 - y^3 = \ldots\ldots$ **(6) حلل:** $x^3 - y^3 = \ldots\ldots$

(A) $(x-y)(x^2 - xy + y^2)$ (B) $(x-y)(x^2 + xy + y^2)$ (C) $(x+y)(x^2 + xy + y^2)$ (D) $(x+y)(x^2 - xy + y^2)$

(7) Multiplying $(a + 3b)^2 = \ldots\ldots$ **(7) حاصل ضرب:** $(a + 3b)^2 = \ldots\ldots$

(A) $a^2 + 3ab + 9b^2$ (B) $a^2 - 6ab + b^2$ (C) $a^2 + 6ab + 9b^2$ (D) $a^2 + 9ab + 9b^2$

(8) If $\dfrac{x}{4} = \dfrac{9}{6}$, then $x = \ldots\ldots$ **(8) اذا كان** $\dfrac{x}{4} = \dfrac{9}{6}$ **اذن** $x = \ldots\ldots$

(A) 6   (B) 3   (C) 9   (D) 2

(9) The degree of a polynomials: $2x^2 y^3 z - 3xy^4 z^3 + x^3 y^2 z^4 - 7$ is $\ldots\ldots$

(9) درجة كثيرة الحدود $2x^2 y^3 z - 3xy^4 z^3 + x^3 y^2 z^4 - 7$ **تكون** $\ldots\ldots$

(A) 6   (B) 7   (C) 8   (D) 9

(10) Multiply: $(2x + 4)(3x - 2) = \ldots\ldots$ **(10) اضرب :** $(2x + 4)(3x - 2) = \ldots\ldots$

(A) $6x^2 - 8x + 8$ (B) $6x^2 - 8x - 8$ (C) $6x^2 + 8x - 8$ (D) $6x^2 + 8x + 8$

Question 2:

(1) Simplify: $5x^3 - (-3x)^3$ ①   **(1) بسط :** $5x^3 - (-3x)^3$

.

(2) Simplify: $\left(\dfrac{m^2}{n^3 \cdot n^{-3}} \right)^3$ ①   **(2) بسط :** $\left(\dfrac{m^2}{n^3 \cdot n^{-3}} \right)^3$

(3) Simplify: $(-32)^{\frac{3}{5}} = \dots$ (1) $(-32)^{\frac{3}{5}} = \dots$: بسط **(3)**

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(4) Multiply: $(2x-3)(4x^2+3x-2)$ (1) $(2x-3)(4x^2+3x-2)$: اضرب **(4)**

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(5) Subtract: $3x^2 - 4$ from $4x^2 + 5x - 3$.   (1)

(5) اطرح $4 - 3x^2$ من $4x^2 + 5x - 3$.

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(6) Simplify: $5\sqrt{8} - 2\sqrt{18}$ (1) $5\sqrt{8} - 2\sqrt{18}$:بسط **(6)**

Question 3: Factor the following polynomials: (ب) حلل كثيرات الحدود الآتية:

$(1)\, ab + ac - 3db - 3dc$ (1)

$(2)\ x^2 - 9$ (1)

.

$(3)\ 3x^2 - x - 2$ (1)

$(4)\, 8x^3 + 27$ (1)

<u>اجابة الاختبار الفصلى الأول الفصل الدراسى الأول العام الجامعى 1440 – 1441 هـ</u>

Question 1: **Choose the correct answer:**　　10　　السؤال الأول: أختر الإجابة الصحيحة:

---

(1) The additive inverse of $-\dfrac{3}{4}$ is ....　　　**(1) المعكوس الجمعي لـ $-\dfrac{3}{4}$ يكون ....**

(A)$-\dfrac{3}{4}$　　　(B)$\dfrac{3}{4}$　　　(C)$-\dfrac{4}{3}$　　　(D)$\dfrac{4}{3}$

---

(2)Evaluate: $\left(\dfrac{5}{2}-3\right)^{-1}=$ ....　　(2) قيم (اوجد قيمة): $\left(\dfrac{5}{2}-3\right)^{-1}=$ ....

(A)$\dfrac{1}{2}$　　　(B)$-\dfrac{1}{2}$　　　(C)-2　　　(D) 2

---

(3) Simplify using exponents properties: $(2a^3)(a^{-5})(4a^2)=$ .....

(3) بسط باستخدام خصائص الأسس: $(2a^3)(a^{-5})(4a^2)=$ ....

(A)8　　　(B)$8a^3$　　　(C)$8a^2$　　　(D)$8a^{-5}$

---

(4) Evaluate: $(-16)^{\frac{1}{2}}=$ ....　　　**(4) قيم (اوجد قيمة):** $(-16)^{\frac{1}{2}}=$ ....

(A)± 4　　　(B)-4　　　(C) 4　　　(D)is not real

---

(5)simplify: $\left(2x^3+4x^2-3x\right)+\left(x^3-2x^2+3\right)-\left(3x^3+2x^2-3x\right)=$ ....

(5) بسط: $\left(3x^3+2x^2-3x\right)-\left(x^3-2x^2+3\right)+\left(2x^3+4x^2-3x\right)=$ ....

(A)$3x^3+3$　　　(B) $6x^2+3$　　　(C) $6x+3$　　　(D)3

---

(6)Factor: $x^3-y^3=$ ....　　　**(6) حلل:** $x^3-y^3=$ .....

(A)$(x-y)(x^2-xy+y^2)$　　(B)$(x-y)(x^2+xy+y^2)$　　(C)$(x+y)(x^2+xy+y^2)$　　(D)$(x+y)(x^2-xy+y^2)$

---

(7) Multiplying $(a+3b)^2 = $ ....

(7) حاصل ضرب: $(a+3b)^2 = $ ....

(A) $a^2 + 3ab + 9b^2$ (B) $a^2 - 6ab + b^2$ **(C) $a^2 + 6ab + 9b^2$** (D) $a^2 + 9ab + 9b^2$

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(8) If $\dfrac{x}{4} = \dfrac{9}{6}$, then $x = $ ....

(8) اذا كان $\dfrac{x}{4} = \dfrac{9}{6}$ **اذن** $x = $ ....

(A) 6 (B) 3 (C) 9 (D) 2

---

(9) The degree of a polynomials: $2x^2y^3z - 3xy^4z^3 + x^3y^2z^4 - 7$ is ....

(9) درجة كثيرة الحدود $2x^2y^3z - 3xy^4z^3 + x^3y^2z^4 - 7$ **تكون** ....

(A) 6 (B) 7 (C) 8 **(D) 9**

---

(10) Multiply: $(2x+4)(3x-2) = $ ....

(10) اضرب: $(2x+4)(3x-2) = $ ....

(A) $6x^2 - 8x + 8$ (B) $6x^2 - 8x - 8$ **(C) $6x^2 + 8x - 8$** (D) $6x^2 + 8x + 8$

Question 2:

(1) Simplify: $5x^3 - (-3x)^3$ ① $\quad$ **(1) بسط:** $5x^3 - (-3x)^3$

$$\because 5x^3 - (-3x)^3 = 5x^3 - (-3)^3(x)^3$$
$$= 5x^3 - (-27)x^3$$
$$= 5x^3 + 27x^3 = 32x^3$$

(2) Simplify: $\left(\dfrac{m^2}{n^3 \cdot n^{-3}}\right)^3$ ① $\quad$ **(2) بسط:** $\left(\dfrac{m^2}{n^3 \cdot n^{-3}}\right)^3$

$$\because \left(\dfrac{m^2}{n^3 \cdot n^{-3}}\right)^3 = \left(\dfrac{m^2}{n^{3+(-3)}}\right)^3 = \left(\dfrac{m^2}{n^0}\right)^3 = \left(\dfrac{m^2}{1}\right)^3 = m^{(2)(3)} = m^6$$

(3) Simplify: $(-32)^{\frac{3}{5}} = ...$ ⬭1⬭ $(-32)^{\frac{3}{5}} = ...$: بسط **(3)**

$$\because (-32)^{\frac{3}{5}} = \left((-32)^{\frac{1}{5}}\right)^{3} = (-2)^{3} = -8$$

(4) Multiply: $(2x-3)(4x^2+3x-2)$ ⬭1⬭ $(2x-3)(4x^2+3x-2)$: اضرب **(4)**

$$\therefore (2x-3)(4x^2+3x-2) = 2x(4x^2+3x-2)-3(4x^2+3x-2)$$
$$= 8x^3 + 6x^2 - 4x - 12x^2 - 9x + 6$$
$$= 8x^3 - 6x^2 - 13x + 6$$

(5) Subtract: $3x^2-4$ from $4x^2+5x-3$. ⬭1⬭

(5) اطرح $3x^2-4$ من $4x^2+5x-3$.

$$\therefore (4x^2+5x-3)-(3x^2-4) = 4x^2+5x-3-3x^2+4$$
$$= (4x^2-3x^2)+5x+(-3+4)$$
$$= x^2+5x+1$$

(6) Simplify: $5\sqrt{8}-2\sqrt{18}$ ⬭1⬭ $5\sqrt{8}-2\sqrt{18}$: بسط **(6)**

$$\therefore 5\sqrt{8}-2\sqrt{18} = 5\sqrt{4}\sqrt{2} - 2\sqrt{9}\sqrt{2}$$
$$= 5 \times 2\sqrt{2} - 2 \times 3\sqrt{2}$$
$$= 10\sqrt{2} - 6\sqrt{2} = 4\sqrt{2}$$

Question 3: Factor the following polynomials: (ب) حلل كثيرات الحدود الآتية:

$(1)\; ab + ac - 3db - 3dc$ ⬭ 1

$$\therefore ab + ac - 3db - 3dc = \left(ab + ac\right) + \left(-3db - 3dc\right)$$
$$= a\left(b + c\right) - 3d\left(b + c\right)$$
$$= \left(b + c\right)\left(a - 3d\right)$$

$(2)\;\; x^2 - 9$ ⬭ 1

$$\therefore\; x^2 - 9 = \left(x + 3\right)\left(x - 3\right)$$

$(3)\;\; 3x^2 - x - 2$ ⬭ 1

$$\therefore\; 3x^2 - x - 2 = \left(3x + 2\right)\left(x - 1\right)$$

$(4)\, 8x^3 + 27$ ⬭ 1

$$\therefore 8x^3 + 27 = \left(2x + 3\right)\left(4x^2 - 6x + 9\right)$$

" The End"

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MINSTRY OF EDUCATION
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كـليـة العلــوم
قسم الرياضيات

The First Mid-Term Exam - Semester II - Year 1438/1439 H

SUBJECT: **General Mathematics**   (Mathematics)   code: **Math 101(100)**

Allowed Time: **1.5 Hour**   **DATE: 9 /06/1439** H   Full Marks: **20**

" The Calculator is not Allowed"

Name:_____   ID No.:_____

ANSWER THE FOLLOWING QUESTIONS: [Mode B]

Question 1. CHOOSE THE CORRECT ANSWER:

1. The additive inverse and the multiplicative inverse of $-\dfrac{5}{4}$ are .....and .....respectively.

(A) $\frac{5}{4}$ and $-\frac{4}{5}$ (B) $\frac{5}{4}$ and $\frac{4}{5}$ (C) $-\frac{5}{4}$ and $\frac{4}{5}$ (D) $-\frac{5}{4}$ and $-\frac{4}{5}$

2. $49a^2 - 9b^2 = \ldots\ldots\ldots$

(A) $(7a + 3b)(7a + 3b)$ (B) $(7a - 3b)(7a + 3b)$ (C) $(49a - b)(a + 9b)$ (D) $(7a - 3b)(7a - 3b)$

3. $\left(\dfrac{4}{3} - \dfrac{2}{5}\right)^{-1} = \ldots\ldots\ldots$

(A) $\dfrac{14}{15}$ (B) $-\dfrac{15}{14}$ (C) $-\dfrac{14}{5}$ (D) $\dfrac{15}{14}$

4. Simplify: $\sqrt[n]{(2xy)^{3n}} = \ldots\ldots\ldots$

(A) $8x^3y^3$ (B) $2xy$ (C) $2x^3y^3$ (D) $8x^{3n}y^{3n}$

5. The degree of a polynomial $x^3y^4z^2 - 5x^2y^2z - x^6y^4z - 1$ is......

(A) 9   (B) 5   (C) 10   (D) 11

Question 2. Simplify The Following:

(1) $\left(\dfrac{2m^4 m^{-2}}{3m^{-3} m^2}\right)^3$

(2) $(3a + 2b)^2$

(3) $5x^3 - (-2x)^3$

(4) $(2x^3)(x^{-2})(5x^{-1})$

(5) $3\sqrt{27} - 4\sqrt{12}$

(6) $\left(\dfrac{-32y^5}{x^{10} z^5}\right)^{\frac{2}{5}}$

(7) $\sqrt[3]{-8m^3 n^6 w^9}$

(8) $(x^3 + 6x^2 - 4x - 5) + (3x^3 - 4x^2 + 4x + 3)$

(9) $(x^2 + 6x - 5)$ - $(x^3 - 2x - 2)$

(10) $(x + 2y)(x^2 - 2xy + 4y^2)$

Question 3. (A) Factor The Following:

(1) $2x^4y - 16xy^4$

(2) $4xw + zy + 4zw + xy$

(3) $2x^2 - 5x - 3$

(B) Solve: $\dfrac{2x + 2}{3} + 8 = 2(x + 3)$.

"The End"

Answer Model [B] first mid-term semester II 1438/1339 H

Question 1. CHOOSE THE CORRECT ANSWER:

(1) The additive inverse and the multiplicative inverse of $-\dfrac{5}{4}$ are $\dfrac{5}{4}$ and $-\dfrac{4}{5}$ respectively.

The answer (A)

(2) $49a^2 - 9b^2 = (7a - 3b)(7a + 3b)$

The answer (B)

(3) $\left(\dfrac{4}{3} - \dfrac{2}{5}\right)^{-1} = \left(\dfrac{4 \times 5 - 3 \times 2}{3 \times 5}\right)^{-1} = \left(\dfrac{14}{15}\right)^{-1} = \dfrac{15}{14}$

The answer (D)

(4) Simplify: $\sqrt[n]{(2xy)^{3n}} = (2xy)^3 = 8x^3 y^3$

The answer (A)

(5) The degree of a polynomial $x^3 y^4 z^2 - 5x^2 y^2 z - x^6 y^4 z - 1$ is 11

The answer (D)

Question 2. Simplify The Following:

(1) $\left(\dfrac{2m^4 m^{-2}}{3m^{-3} m^2}\right)^3 = \left(\dfrac{2}{3} m^{4+(-2)-(-3)-2}\right)^3 = \left(\dfrac{2}{3} m^3\right)^3 = \dfrac{2^3 m^9}{3^3} = \dfrac{8m^9}{27}$

(2) $(3a + 2b)^2 = (3a)^2 + 2(3a)(2b) + (2b)^2 = 9a^2 + 12ab + 4b^2$

(3) $5x^3 - (-2x)^3 = 5x^3 - (-2)^3 x^3 = 5x^3 - (-8)x^3 = 5x^3 + 8x^3 = 13x^3$

(4) $\left(2x^3\right)\left(x^{-2}\right)\left(5x^{-1}\right) = 10x^{3+(-2)+(-1)} = 10x^0 = 10$

(5) $3\sqrt{27} - 4\sqrt{12} = 3\sqrt{9}\sqrt{3} - 4\sqrt{4}\sqrt{3} = 9\sqrt{3} - 8\sqrt{3} = \sqrt{3}$

(6) $\left(\dfrac{-32y^5}{x^{10} z^5}\right)^{\frac{2}{5}} = \left(\left(\dfrac{-32y^5}{x^{10} z^5}\right)^{\frac{1}{5}}\right)^2 = \left(\dfrac{(-32)^{\frac{1}{5}} \left(y^5\right)^{\frac{1}{5}}}{\left(x^{10}\right)^{\frac{1}{5}} \left(z^5\right)^{\frac{1}{5}}}\right)^2 = \left(\dfrac{-2y}{x^2 z}\right)^2 = \dfrac{4y^2}{x^4 z^2}$

$(7)\ \sqrt[3]{-8m^3n^6w^9} = \sqrt[3]{-8}\,\sqrt[3]{m^3}\,\sqrt[3]{n^6}\,\sqrt[3]{w^9} = -2mn^2w^3$

$(8)\left(x^3 + 6x^2 - 4x - 5\right) + \left(3x^3 - 4x^2 + 4x + 3\right) = x^3 + 6x^2 - 4x - 5 + 3x^3 - 4x^2 + 4x + 3$

$$= \left(x^3 + 3x^3\right) + \left(6x^2 - 4x^2\right) + \left(-4x + 4x\right) + \left(-5 + 3\right)$$

$$= 4x^3 + 2x^2 - 2$$

$(9)\left(x^2 + 6x - 5\right) - \left(x^3 - 2x - 2\right) = x^2 + 6x - 5 - x^3 + 2x + 2$

$$= -x^3 + x^2 + 8x - 3$$

$(10)\left(x + 2y\right)\left(x^2 - 2xy + 4y^2\right) = x\left(x^2 - 2xy + 4y^2\right) + 2y\left(x^2 - 2xy + 4y^2\right)$

$$= x^3 - 2x^2y + 4xy^2 + 2x^2y - 4x^2 + 8y^3$$

$$= x^3 + 8y^3$$

Question 3. (A) Factor The Following:

$(1)\ 2x^4y - 16xy^4 = 2xy(x^3 - 8y^3) = 2xy(x - 2y)(x^2 + 2xy + 4y^2)$

$(2)\ 4xw + zy + 4zw + xy = \left(4xw + 4zw\right) + \left(zy + xy\right)$

$$= 4w\left(x + z\right) + y\left(x + z\right)$$

$$= \left(x + z\right)\left(4w + y\right)$$

$(3)\ 2x^2 - 5x - 3 = \left(2x + 1\right)\left(x - 3\right)$

(B) Solve: $\dfrac{2x + 2}{3} + 8 = 2(x + 3)$

$\because \dfrac{2x + 2}{3} + 8 = 2(x + 3) \quad \therefore 3 \times \left(\dfrac{2x + 2}{3}\right) + 3 \times 8 = 3 \times 2(x + 3)$

$$\Rightarrow 2x + 2 + 24 = 6(x + 3)$$

$$\Rightarrow 2x + 26 = 6x + 18$$

$$\Rightarrow 6x - 2x = 26 - 18$$

$$\therefore 4x = 8 \Rightarrow x = 2$$

The solution set is $\{2\}$.

Name:_____   ID No.:_____

ANSWER THE FOLLOWING QUESTIONS: [Mode A]

Question 1. CHOOSE THE CORRECT ANSWER:

1. $\left(\dfrac{4}{3} - \dfrac{2}{5}\right)^{-1} = $ ....

   (A) $-\dfrac{14}{5}$ **(B)** $\dfrac{15}{14}$ **(C)** $\dfrac{14}{15}$ **(D)** $-\dfrac{15}{14}$

2. The additive inverse and the multiplicative inverse of $-\dfrac{5}{4}$ are .....and .....respectively.

   (A) $-\frac{5}{4}$ and $\frac{4}{5}$ **(B)** $-\frac{5}{4}$ and $-\frac{4}{5}$ **(C)** $\frac{5}{4}$ and $-\frac{4}{5}$ **(D)** $\frac{5}{4}$ and $\frac{4}{5}$

3. Simplify: $\sqrt[n]{(2xy)^{3n}} = $ ....

   (A) $2x^3y^3$ **(B)** $8x^{3n}y^{3n}$ **(C)** $8x^3y^3$ **(D)** $2xy$

4. The degree of a polynomial $\quad x^3y^4z^2 - 5x^2y^2z - x^6y^4z - 1$ is......

   (A) 10   **(B)** 11   **(C)** 9   **(D)** 5

5. $49a^2 - 9b^2 = $ ....

  (A) $(49a - b)(a + 9b)$ **(B)** $(7a - 3b)(7a - 3b)$ **(C)** $(7a + 3b)(7a + 3b)$ **(D)** $(7a - 3b)(7a + 3b)$

Question 2. Simplify The Following:

(1) $\left(\dfrac{2x^4x^{-2}}{3x^{-3}x^2}\right)^3$

(2) $(3x + 2y)^2$

(3) $5m^3 - (-2m)^3$

(4) $(2y^3)(y^{-2})(5y^{-1})$

(5) $4\sqrt{27} - 2\sqrt{12}$

(6) $\left(\dfrac{-32x^5}{y^{10}z^5}\right)^{\frac{2}{5}}$

(7) $\sqrt[3]{-8u^3v^6w^9}$

(8) $(x^3 + 6x^2 - 4x - 5) + (3x^3 - 4x^2 + 4x + 3)$

(9) $(x^2 + 6x - 5) - (x^3 - 2x - 2)$

(10) $(x + 2y)(x^2 - 2xy + 4y^2)$

Question 3. (A) Factor The Following:

(1) $16x^4y - 2xy^4$

(2) $3xw + zy + 3zw + xy$

(3) $2x^2 + 5x - 3$

(B) Solve: $\dfrac{2x+4}{3} + 8 = 2(x+4)$.

Answer Model [A] first mid-term semester II 1438/1339 H

Question 1. CHOOSE THE CORRECT ANSWER:

(1) $\left(\dfrac{4}{3}-\dfrac{2}{5}\right)^{-1}=\left(\dfrac{4\times5-3\times2}{3\times5}\right)^{-1}=\left(\dfrac{14}{15}\right)^{-1}=\dfrac{15}{14}$

The answer (B)

(2) The additive inverse and the multiplicative inverse of $-\dfrac{5}{4}$ are $\dfrac{5}{4}$ and $-\dfrac{4}{5}$ respectively.

The answer (C)

(3) Simplify: $\sqrt[n]{(2xy)^{3n}}=(2xy)^3=8x^3y^3$

The answer (C)

(4) The degree of a polynomial $x^3y^4z^2-5x^2y^2z-x^6y^4z-1$ is 11

The answer (B)

(5) $49a^2-9b^2=(7a-3b)(7a+3b)$

The answer (D)

Question 2. Simplify The Following:

(1) $\left(\dfrac{2x^4x^{-2}}{3x^{-3}x^2}\right)^3=\left(\dfrac{2}{3}x^{4+(-2)-(-3)-2}\right)^3=\left(\dfrac{2}{3}x^3\right)^3=\dfrac{2^3x^9}{3^3}=\dfrac{8x^9}{27}$

(2) $(3x+2y)^2=(3x)^2+2(3x)(2y)+(2y)^2=9x^2+12xy+4y^2$

(3) $5m^3-(-2m)^3=5m^3-(-2)^3m^3=5m^3-(-8)m^3=5m^3+8m^3=13m^3$

(4) $(2y^3)(y^{-2})(5y^{-1})=10y^{3+(-2)+(-1)}=10y^0=10$

(5) $4\sqrt{27}-2\sqrt{12}=4\sqrt{9}\sqrt{3}-2\sqrt{4}\sqrt{3}=12\sqrt{3}-4\sqrt{3}=8\sqrt{3}$

(6) $\left(\dfrac{-32x^5}{y^{10}z^5}\right)^{\frac{2}{5}}=\left(\left(\dfrac{-32x^5}{y^{10}z^5}\right)^{\frac{1}{5}}\right)^2=\left(\dfrac{(-32)^{\frac{1}{5}}(x^5)^{\frac{1}{5}}}{(y^{10})^{\frac{1}{5}}(z^5)^{\frac{1}{5}}}\right)^2=\left(\dfrac{-2x}{y^2z}\right)^2=\dfrac{4x^2}{y^4z^2}$

(7) $\sqrt[3]{-8u^3v^6w^9} = \sqrt[3]{-8}\sqrt[3]{u^3}\sqrt[3]{v^6}\sqrt[3]{w^9} = -2uv^2w^3$

$(8)\left(x^3+6x^2-4x-5\right)+\left(3x^3-4x^2+4x+3\right) = x^3+6x^2-4x-5+3x^3-4x^2+4x+3$

$$= \left(x^3+3x^3\right)+\left(6x^2-4x^2\right)+\left(-4x+4x\right)+\left(-5+3\right)$$

$$= 4x^3+2x^2-2$$

$(9)\left(x^2+6x-5\right)-\left(x^3-2x-2\right) = x^2+6x-5-x^3+2x+2$

$$= -x^3+x^2+8x-3$$

$(10)(x+2y)\left(x^2-2xy+4y^2\right) = x\left(x^2-2xy+4y^2\right)+2y\left(x^2-2xy+4y^2\right)$

$$= x^3-2x^2y+4xy^2+2x^2y-4x^2+8y^3$$

$$= x^3+8y^3$$

Question 3. (A) Factor The Following:

$(1)16x^4y-2xy^4 = 2xy(8x^3-y^3) = 2xy(2x-y)(4x^2+2xy+y^2)$

$(2)3xw+zy+3zw+xy = \left(3xw+3zw\right)+\left(zy+xy\right)$

$$= 3w\left(x+z\right)+y\left(x+z\right)$$

$$= \left(x+z\right)(3w+y)$$

$(3)2x^2+5x-3 = \left(2x-1\right)(x+3)$

(B) Solve: $\dfrac{2x+4}{3}+8 = 2(x+4)$

$\because \dfrac{2x+4}{3}+8 = 2(x+4) \quad \therefore 3\times\left(\dfrac{2x+4}{3}\right)+3\times8 = 3\times2(x+4)$

$$\Rightarrow 2x+4+24 = 6(x+4)$$

$$\Rightarrow 2x+28 = 6x+24$$

$$\Rightarrow 6x-2x = 28-24$$

$$\therefore 4x = 4 \Rightarrow x = 1$$

The solution set is $\{1\}$.

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The First Mid-Term Exam - Semester I - Year 1438/1439 H
SUBJECT: General Mathematics (Mathematics) code: Math 101(100)
Allowed Time: **1.5 Hour** DATE: **9 /02/1439** Full Marks: **20**

Name:_____ ID No.:_____

ANSWER THE FOLLOWING QUESTIONS: [Model 1]

Question 1. Evaluate The Following:

$(a)\left(2-\dfrac{5}{3}\right)^{-1}=\left(\dfrac{2}{1}-\dfrac{5}{3}\right)^{-1}=\left(\dfrac{2\times3-5\times1}{1\times3}\right)^{-1}=\left(\dfrac{6-5}{3}\right)^{-1}=\left(\dfrac{1}{3}\right)^{-1}=3$

$(b)\dfrac{5}{4}\div\left(\dfrac{15}{8}\div\dfrac{6}{4}\right)=\dfrac{5}{4}\div\left(\dfrac{15}{8}\times\dfrac{4}{6}\right)=\dfrac{5}{4}\div\left(\dfrac{5}{4}\right)=\dfrac{5}{4}\times\dfrac{4}{5}=1$

$(c)\left(\dfrac{25}{9}\right)^{-\frac{1}{2}}=\left(\dfrac{9}{25}\right)^{\frac{1}{2}}=\sqrt{\dfrac{9}{25}}=\dfrac{3}{5}$

Question 2. Simplify The Following:

(1) $2y^3-(-3y)^3=2y^3-(-27y^3)=2y^3+27y^3=29y^3$

(2) $(2x)(3x^3)(4x^2)=(2\times3\times4)x^{1+3+2}=24x^6$

$(3)\left(\dfrac{x^{-3}}{y^4 y^{-4}}\right)^{-1} = \dfrac{x^{(-3)(-1)}}{y^{(4)(-1)}y^{(-4)(-1)}} = \dfrac{x^3}{y^{-4}y^4} = \dfrac{x^3}{y^{-4+4}} = \dfrac{x^3}{y^0} = \dfrac{x^3}{1} = x^3$

$(4)\ \sqrt[n]{(2xy)^{2n}} = (2xy)^{\frac{2n}{n}} = (2xy)^2 = 4x^2 y^2$

$(5)\ 2\sqrt{18} - 2\sqrt{2} = 2\sqrt{9\times 2} - 2\sqrt{2} = 2\times 3\sqrt{2} - 2\sqrt{2} = 6\sqrt{2} - 2\sqrt{2} = 4\sqrt{2}$

$(6)\left(-\dfrac{27x^6}{8y^3}\right)^{\frac{2}{3}} = \left(\sqrt[3]{-\dfrac{27x^6}{8y^3}}\right)^2 = \left(-\dfrac{3x^2}{2y}\right)^2 = \dfrac{9x^4}{4y^2}$

$(7)\ \sqrt[3]{-64x^6 y^3 z^9} = -4x^2 yz^3$

Question 3. Factor The Following:

$(I)\ 25x^2 - 16y^2 = (5x - 4y)(5x + 4y)$

$(II)\ 8u^3 - 27 = (2u - 3)(4u^3 + 6u + 9)$

$(III)\ 3y^2 + 4y - 15 = (3y - 5)(y + 3)$

(IV) $6wy - xz - 2xy + 3wz = (6wy - 2xy) + (-xz + 3wz)$
$$= 2y(3w - x) + z(-x + 3w)$$
$$= (3w - x)(2y + z)$$

Question 4.

(a) The additive inverse and multiplicative inverse of $-\dfrac{5}{4}$ are $\dfrac{5}{4}$ and $-\dfrac{4}{5}$ respectively.

(b) If $\dfrac{3}{x} = \dfrac{6}{8}$; then $6x = 24$ $\rightarrow$ $x = 4$

(c) Add: $3x^4 + 4x^3 - 2x + 4$ and $-3x^4 + 2x - 4$

Sol. $3x^4 + 4x^3 - 2x + 4 - 3x^4 + 2x - 4 = 4x^3$

(d) Multiply: $(2x + 3)(4x^2 - 6x + 9)$

Sol. $2x(4x^2 - 6x + 9) + 3(4x^2 - 6x + 9) = 8x^3 - 12x^2 + 18x + 12x^2 - 18x + 27 = 8x^3 + 27$

(e) Subtract: $(x^2 + 3x + 6)$ from $(2x^3 + 3x - 6)$

Sol. $(2x^3 + 3x - 6) - (x^2 + 3x + 6) = 2x^3 + 3x - 6 - x^2 - 3x - 6 = 2x^3 - x^2 - 12$

(f) Solve: $3(x + 3) - 5 = 2x + 8$

$3x + 9 - 5 = 2x + 8$
$3x + 4 \quad = 2x + 8$
$3x - 2x \quad = 8 - 4$
$\quad x \quad = 4$
Solution set = {4}

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The First Mid-Term Exam - Semester I - Year 1438/1439 H
SUBJECT: General Mathematics (Mathematics) code: Math 101(100)
Allowed Time: **1.5 Hour** DATE: 9 /02/1439 Full Marks: **20**

Name:_____ ID No.:_____

ANSWER THE FOLLOWING QUESTIONS: [Model 2]

Question 1. Evaluate The Following:

$(a)\left(2-\dfrac{7}{4}\right)^{-1}=\left(\dfrac{2}{1}-\dfrac{7}{4}\right)^{-1}=\left(\dfrac{2\times4-7\times1}{1\times4}\right)^{-1}=\left(\dfrac{8-7}{4}\right)^{-1}=\left(\dfrac{1}{4}\right)^{-1}=4$

$(b)\left(\dfrac{5}{4}\div\dfrac{15}{8}\right)\div\dfrac{6}{4}=\left(\dfrac{5}{4}\times\dfrac{8}{15}\right)\div\dfrac{6}{4}=\left(\dfrac{2}{3}\right)\div\dfrac{6}{4}=\dfrac{2}{3}\times\dfrac{4}{6}=\dfrac{4}{9}$

$(c)\left(\dfrac{9}{25}\right)^{-\frac{1}{2}}=\left(\dfrac{25}{9}\right)^{\frac{1}{2}}=\sqrt{\dfrac{25}{9}}=\dfrac{5}{3}$

Question 2. Simplify The Following:

(1) $3y^3-(-2y)^3=3y^3-(-8y^3)=3y^3+8y^3=11y^3$

(2) $(2y)(3y^3)(4y^2)=(2\times3\times4)y^{1+3+2}=24y^6$

(3) $\left(\dfrac{y^4 y^{-4}}{x^{-3}}\right)^{-2} = \dfrac{y^{(4)(-2)} y^{(-4)(-2)}}{x^{(-3)(-2)}} = \dfrac{y^{-8} y^8}{x^6} = \dfrac{y^{-8+8}}{x^6} = \dfrac{y^0}{x^6} = \dfrac{1}{x^6}$

(4) $\sqrt[n]{(2uv)^{2n}} = (2uv)^{\frac{2n}{n}} = (2uv)^2 = 4u^2v^2$

(5) $2\sqrt{18} + 3\sqrt{2} = 2\sqrt{9\times 2} + 3\sqrt{2} = 2\times 3\sqrt{2} + 3\sqrt{2} = 6\sqrt{2} + 3\sqrt{2} = 9\sqrt{2}$

(6) $\left(-\dfrac{8y^3}{27x^6}\right)^{\frac{2}{3}} = \left(\sqrt[3]{-\dfrac{8y^3}{27x^6}}\right)^2 = \left(-\dfrac{2y}{3x^2}\right)^2 = \dfrac{4y^2}{9x^4}$

(7) $\sqrt[3]{-64m^6n^3z^9} = -4m^2nz^3$

Question 3. Factor The Following:

(I) $16x^2 - 25y^2 = (4x - 5y)(4x + 5y)$

(II) $8u^3 + 27 = (2u + 3)(4u^3 - 6u + 9)$

(III) $3y^2 - 4y - 15 = (3y + 5)(y - 3)$

(IV) $6xy - wz - 2wy + 3xz = (6xy - 2wy) + (-wz + 3xz)$
$$= 2y(3x - w) + z(-w + 3x)$$
$$= (3x - w)(2y + z)$$

Question 4.

(a) The additive inverse and multiplicative inverse of $-\dfrac{7}{4}$ are $\dfrac{7}{4}$ and $-\dfrac{4}{7}$ respectively.

(b) If $\dfrac{3}{4} = \dfrac{6}{x}$; then $3x = 24$ $\rightarrow$ $x = 8$

(c) Add: $3x^4 + 4x^3 + 2x + 4$ and $-3x^4 + 2x - 4$

Sol. $3x^4 + 4x^3 + 2x + 4 - 3x^4 + 2x - 4 = 4x^3 + 4x$

(d) Multiply: $(2x - 3)(4x^2 + 6x + 9)$

Sol. $2x(4x^2 + 6x + 9) - 3(4x^2 + 6x + 9) = 8x^3 + 12x^2 + 18x - 12x^2 - 18x - 27 = 8x^3 - 27$

(e) Subtract: $(x^2 - 3x + 6)$ from $(2x^3 + 3x - 6)$

Sol. $(2x^3 + 3x - 6) - (x^2 - 3x + 6) = 2x^3 + 3x - 6 - x^2 + 3x - 6 = 2x^3 - x^2 + 6x - 12$

(f) Solve: $3(x + 5) - 5 = 2x + 8$

$\therefore 3x + 15 - 5 = 2x + 8$
$\Rightarrow 3x + 10 = 2x + 8$
$\Rightarrow 3x - 2x = 8 - 10$
$\quad \therefore x = -2$
The Solution set $= \{-2\}$

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The First Mid-Term Exam - Semester I - Year 1438/1439 H

SUBJECT: **General Mathematics** (Mathematics) code: **Math 101(100)**

Allowed Time: **1.5 Hour** DATE: **20 /02/1439** Full Marks: **20**

Name:_____ ID No.:_____

CHOOSE THE CORRECT ANSWER[**Model 1**]

1. $\left(\dfrac{7}{4}+\dfrac{2}{4}\right)^{-\frac{1}{2}} = $ ....

(A) $\dfrac{2}{3}$ (B) $\dfrac{3}{2}$ (C) $-\dfrac{3}{2}$ (D) $-\dfrac{2}{3}$

2. If $\dfrac{3}{4}=\dfrac{6}{x}$, then $x = $ ....

(A) 4 (B) 8 (C) 6 (D) 3

3. $\sqrt[4]{-16} = $ ....

(A) 2 (B) -2 (C) ± 2 (D) not real

4. The additive inverse and the multiplicative inverse of $-\dfrac{5}{4}$ are .....and .....respectively.

(A) $\frac{5}{4}$ and $-\frac{4}{5}$ (B) $-\frac{5}{4}$ and $\frac{4}{5}$ (C) $-\frac{4}{5}$ and $\frac{5}{4}$ (D) $\frac{5}{4}$ and $-\frac{4}{5}$

5. Simplify: $\left(x^3\right)^3 = $ ....

(A) x^7 (B) x^{12} (C) x^6 (D) x^9

6. Simplify: $\left(\dfrac{x^{-3}}{y^4 y^{-4}}\right)^{-2} = $ ....

(A) x^9 (B) $\frac{1}{x^6}$ (C) x^6 (D) $\frac{1}{x^9}$

7. Simplify: $\sqrt[n]{(2xy)^{2n}} = $ ....

(A) $8x^3y^3$ (B) $16x^2y^2$ (C) $9x^2y^2$ (D) $4x^2y^2$

8. $2\sqrt{18} - 2\sqrt{2} = $ ....

(A) $\sqrt{2}$ (B) $3\sqrt{2}$ (C) $4\sqrt{2}$ (D) $2\sqrt{2}$

9. $\left(-\dfrac{27}{64}\right)^{\frac{2}{3}} = $ ....

(A) $\dfrac{9}{16}$ (B) $\dfrac{16}{9}$ (C) $\dfrac{4}{9}$ (D) $\dfrac{9}{4}$

10. The degree of a polynomial $x^4y^3 - 5x^3y^3 - yx^9 + 15$ is......

(A) 7 (B) 8 (C) 9 (D) 10

11. $(3x^4 + 4x^3 - 2x + 4) + (-3x^4 + 2x - 4) = $ ....

(A) $2x$ (B) $3x^4$ (C) $4x^3$ (D) 4

12. $25x^2 - 16y^2 = $ ....

(A) $(5x - 4y)(5x + 4y)$ (B) $(4x - 5y)(4x + 5y)$ (C) $(5y - 4x)(5y + 4x)$ (D) $(4y - 5x)(4y + 5x)$

13. $(2x + 3)(4x^2 - 6x + 9) = $ ....

(A) $8x^3 - 27$ (B) $27x^3 - 8$ (C) $8x^3 + 27$ (D) $27x^3 + 8$

14. $a^3 - 1 = $ ....

(A) $(a + 1)(a^2 - a + 1)$ (B) $(a - 1)(a^2 - a + 1)$ (C) $(a - 1)(a^2 + a + 1)$ (D) $(a + 1)(a^2 + a + 1)$

15. $3y^2 + 4y - 15 = $ ....

(A) $(3y + 5)(y - 3)$ (B) $(3y - 5)(y + 3)$ (C) $(3y + 3)(y - 5)$ (D) $(3y - 5)(y - 3)$

16. If $3(x + 3) - 5 = 2x + 8$, then the solution set is ....

(A) $\{3\}$ (B) $\{4\}$ (C) $\{5\}$ (D) $\{2\}$

17. $(2x)(3x^3)(4x^2) = $ ....

(A) $24x^8$ (B) $24x^7$ (C) $24x^6$ (D) $24x^9$

11. $(2x^3 + 3x - 6) - (x^2 + 3x + 6) = $ ....

(A) $2x^3 + 12$ (B) $2x^5 - x^2$ (C) $2x^3 + 6x + 12$ (D) $2x^3 - x^2$

The End.

QUES. NO.	CHOOSE THE CORRECT ANSWER			
(1)	$\left(\dfrac{3}{2}+\dfrac{5}{3}\right)^{-1} = \ldots\ldots\ldots\ldots$			
	A $\dfrac{8}{5}$	**B** $\dfrac{5}{8}$	**C** $\dfrac{19}{6}$	D $\dfrac{6}{19}$
(2)	$-2x^3-(-2x)^3 = \ldots\ldots\ldots\ldots\ldots$			
	A $6x^3$	**B** $-4x^3$	**C** $10x^3$	**D** $-6x^3$
(3)	$\left(\dfrac{n^2}{m^3 m^{-3}}\right)^{-2} = \ldots\ldots\ldots\ldots\ldots$			
	A n^{-4}	**B** n^4	**C** n^2	**D** n^{-2}
(4)	$\left(4a^4 b^6 c^8\right)^{\frac{1}{2}} = \ldots\ldots\ldots\ldots$			
	A $2a^2 b^3 c^4$	**B** $2a^4 b^3 c^4$	**C** $2a^2 b^6 c^4$	**D** $4a^2 b^4 c^6$
(5)	$6x^2-10xy-4y^2 = \ldots\ldots\ldots\ldots$			
	A $(3x-y)(2x+4y)$	**B** $(3x+y)(2x-4y)$	**C** $(3x-2y)(2x+2y)$	**D** $(3x-4y)(2x+y)$
(6)	$x^3-27y^3 = \ldots\ldots\ldots\ldots$			
	A $(x-3y)(x-3y)$	**B** $(x-y)(x^2+3xy+3y^2)$	**C** $(x+3y)(x^2+3xy+9y^2)$	**D** $(x-3y)(x^2+3xy+9y^2)$
(7)	$4b^2-9a^2 =$			
	A $(3b-2a)(3b+2a)$	**B** $(2b+3a)(2b+3a)$	**C** $(2b-3a)(3b-2a)$	**D** $(2b-3a)(2b+3a)$
(8)	$\left(\dfrac{-4}{5}\right)^{-1} = \ldots\ldots\ldots$			
	A $\dfrac{-5}{4}$	**B** $\dfrac{4}{5}$	**C** $-\dfrac{4}{5}$	**D** $\dfrac{5}{4}$
(9)	$\dfrac{a^n}{a^m} = \ldots\ldots\ldots$			
	A a^{m-n}	**B** a^{m+n}	**C** $a^{m \cdot n}$	**D** a^{n-m}

(10)	$\left(\dfrac{27}{8}\right)^{\frac{2}{3}} = \ldots\ldots\ldots$						
	A	$\dfrac{4}{9}$	**B**	$\dfrac{9}{4}$	**C**	$-\dfrac{4}{9}$	**D**	$-\dfrac{9}{4}$

(11)	$\left(\dfrac{25}{16}\right)^{-\frac{1}{2}} = \ldots\ldots\ldots$						
	A	$\dfrac{4}{5}$	**B**	$\dfrac{5}{4}$	**C**	$-\dfrac{4}{5}$	**D**	$-\dfrac{5}{4}$

(12)	$(x-2y)^2 = \ldots\ldots\ldots\ldots\ldots$						
	A	$x^2+2xy-y^2$	**B**	$x^2-4xy+2y^2$	**C**	$x^2+4xy+4y^2$	**D**	$x^2-4xy+4y^2$

(13)	$\left(3x^3+2x^2-x+2\right)-\left(-3x^3+2x^2-x+2\right) =$						
	A	$6x^3$	**B**	$4x^2$	**C**	$2x$	**D**	4

(14)	$(x-2y)(x+2y) =$						
	A	x^2-y^2	**B**	x^2-2y^2	**C**	x^2+4y^2	**D**	x^2-4y^2

(15)	$(2x+y)(4x^2-2xy+y^2) = \ldots\ldots\ldots$						
	A	$2x^3+y^2$	**B**	$8x^3-y^3$	**C**	x^2+8y^3	**D**	$8x^3+y^3$

(16)	$(a^2)^{-3} = \ldots\ldots\ldots$						
	A	a^{-1}	**B**	a^5	**C**	a^{-6}	**D**	a^6

(17)	$\sqrt{27}+5\sqrt{3} =$						
	A	$9\sqrt{3}$	**B**	$6\sqrt{3}$	**C**	$8\sqrt{3}$	**D**	$3\sqrt{3}$

(18)	$(\,3\div 4\,)\div 5 =$						
	A	$\dfrac{12}{5}$	**B**	$\dfrac{15}{4}$	**C**	$\dfrac{3}{20}$	**D**	$\dfrac{20}{3}$

(19)	Let $3(2x-4) = 2(x+2)$, then x=.........						
	A	4	**B**	8	**C**	-4	**D**	-8

(20)	Let $3y-2(y+2)=8$, then $y = \ldots\ldots$						
	A	6	**B**	4	**C**	12	**D**	-4

QUES. NO.	CHOOSE THE CORRECT ANSWER			
(1)	$\left(\dfrac{3}{2}+\dfrac{4}{3}\right)^{-1}=\ldots\ldots\ldots\ldots$			
	A $\dfrac{7}{5}$	**B** $\dfrac{5}{7}$	**C** $\dfrac{17}{6}$	D $\dfrac{6}{17}$
(2)	$-3x^3-(-3x)^3=\ldots\ldots\ldots\ldots\ldots$			
	A $-12x^3$	**B** $24x^3$	**C** $-24x^3$	**D** $-9x^3$
(3)	$\left(\dfrac{m^{\,3}m^{\,-3}}{n^{\,2}}\right)^{-2}=\ldots\ldots\ldots\ldots\ldots$			
	A n^{-4}	**B** n^4	**C** n^2	**D** n^{-2}
(4)	$\left(16a^4b^6c^8\right)^{\frac{1}{2}}=\ldots\ldots\ldots\ldots$			
	A $4a^2b^3c^4$	**B** $2a^4b^3c^4$	**C** $16a^2b^6c^4$	**D** $4a^2b^4c^6$
(5)	$6x^2+10xy-4y^2=\ldots\ldots\ldots\ldots$			
	A $(3x-y)(2x+4y)$	**B** $(3x+y)(2x-4y)$	**C** $(3x-2y)(2x+2y)$	**D** $(3x-4y)(2x+y)$
(6)	$27x^3-y^3=\ldots\ldots\ldots\ldots$			
	A $(3x-y)(9x-3xy)$	**B** $(3x-y)(9x^2+3xy+y^2)$	**C** $(3x+y)(9x^2+3xy+y^2)$	**D** $(3x-y)(9x^2-3xy+y^2)$
(7)	$9b^2-4a^2=$			
	A $(3b-2a)(3b+2a)$	**B** $(3b+2a)(3b+2a)$	**C** $(3b-2a)(3b-2a)$	**D** $(2b-3a)(3b+2a)$
(8)	$\left(\dfrac{-5}{4}\right)^{-1}=\ldots\ldots\ldots$			
	A $\dfrac{-5}{4}$	**B** $\dfrac{4}{5}$	**C** $-\dfrac{4}{5}$	**D** $\dfrac{5}{4}$
(9)	$\dfrac{a^m}{a^{-n}}=\ldots\ldots\ldots$			
	A a^{m-n}	**B** a^{m+n}	**C** $a^{m\cdot n}$	**D** a^{n-m}

(10)	$\left(\dfrac{8}{27}\right)^{\frac{2}{3}} = \dots\dots\dots$							
	A	$\dfrac{4}{9}$	**B**	$\dfrac{9}{4}$	**C**	$-\dfrac{4}{9}$	**D**	$-\dfrac{9}{4}$
(11)	$\left(\dfrac{16}{25}\right)^{-\frac{1}{2}} = \dots\dots\dots$							
	A	$\dfrac{4}{5}$	**B**	$\dfrac{5}{4}$	**C**	$-\dfrac{4}{5}$	**D**	$-\dfrac{5}{4}$
(12)	$(x+2y)^2 = \dots\dots\dots\dots\dots$							
	A	$x^2+2xy+y^2$	**B**	$x^2+4xy+2y^2$	**C**	$x^2+4xy+4y^2$	**D**	$x^2-4xy-4y^2$
(13)	$\left(3x^3+2x^2-x+2\right)+\left(-3x^3+2x^2+x-2\right)=$							
	A	$6x^3$	**B**	$4x^2$	**C**	$2x$	**D**	4
(14)	$(2x-y)(2x+y)=$							
	A	x^2-y^2	**B**	$2x^2-y^2$	**C**	$4x^2-y^2$	**D**	$4x^2+y^2$
(15)	$(2x-y)(4x^2+2xy+y^2)=\dots\dots\dots$							
	A	$2x^3+y^2$	**B**	$8x^3-y^3$	**C**	x^2+8y^3	**D**	$8x^3+y^3$
(16)	$(a^2)^3 = \dots\dots\dots$							
	A	a^6	**B**	a^5	**C**	a^8	**D**	a^9
(17)	$\sqrt{27}-5\sqrt{3} =$							
	A	$3\sqrt{3}$	**B**	$-2\sqrt{3}$	**C**	$5\sqrt{3}$	**D**	$2\sqrt{3}$
(18)	$3 \div (4 \div 5) =$							
	A	$\dfrac{12}{5}$	**B**	$\dfrac{5}{12}$	**C**	$\dfrac{15}{4}$	**D**	$\dfrac{4}{15}$
(19)	Let $3(2x+1)-2=5(x+4)$, then x=..........							
	A	5	**B**	8	**C**	15	**D**	19
(20)	Let $3y-2(y-2)=8$, then $y=\dots\dots$							
	A	6	**B**	4	**C**	12	**D**	-4

KINGDOM OF SAUDI ARABIA
MINSTRY OF EDUCATION
JAZAN UNIVERSITY
Faculty of Science
Department of *Mathematics*

المملكة العربية السعودية
وزارة التعليم
جامعة جـــــازان
كلـيــــة العلــوم
قسم الرياضيات

First Exam- Semester I - Year 1437/1438

SUBJECT: **General Mathematics**   (**Mathematics**)   code: **Math 101(100)**
Allowed Time: **1:30 Hour**   DATE:20/06/1438   Full Marks: **20**

Name:_____   ID No.:_____

CHOOSE THE CORRECT ANSWER[**Model 2**]

1. $\left(\dfrac{64x^3}{27y^6}\right)^{\frac{2}{3}} = $ ....

  (**A**) $\dfrac{16x^2}{9y^2}$ (**B**) $\dfrac{4x^2}{3y^4}$ (**C**) $\dfrac{16x}{9y^2}$ (**D**) $\dfrac{16x^2}{9y^4}$

2. Given a polynomial $5x^3y - 2x^2y^3 - 6x^2 - 5$, then its degree is......

  (**A**) 2   (**B**) 0   (**C**) 5   (**D**) 4

3. $5\sqrt{27} - 4\sqrt{12} = $ ....

  (**A**) $7\sqrt{3}$ (**B**) $8\sqrt{3}$ (**C**) $23\sqrt{3}$ (**D**) $15\sqrt{3}$

4. $2\sqrt{x}\left(3\sqrt{x} - \frac{1}{\sqrt{x}}\right) = $ ....

  (**A**) $6x$ (**B**) $6x - 2$ (**C**) $6x^2 - 2$ (**D**) $6x - 1$

5. $(3x + 2y)^2 = $ ....

  (**A**) $9x^2 - 12xy + 4y^2$ (**B**) $9x^2 - 6xy + 4y^2$
  (**C**) $9x^2 + 6xy + 4y^2$ (**D**) $9x^2 + 12xy + 4y^2$

6. Factor: $3xy - xz - 6wy + 2wz = $ ....

  (**A**) $(2y - z)(x + 3w)$ (**B**) $(y - 3z)(2x + w)$
  (**C**) $(3y - z)(x - 2w)$ (**D**) $(3y - z)(x + 2w)$

7. Add: $(3x^4 - 2x^3 + x^2) + (x^3 - 3x^2 + x - 5) = $ ....

  (**A**) $(3x^4 - x^3 - 2x^2 + x - 5)$ (**B**) $(3x^4 - x^3 + 3x^2 + 5)$
  (**C**) $(3x^7 - 6x^5 + 2x^2)$ (**D**) $(3x^4 - x^3 - x^2 - 5)$

8. Subtract: $2x^2 + 3x - 2$ from $3x^2 + 3x - 3$

  (**A**) $5x^2 - 5$ (**B**) $x^2 - 1$ (**C**) $x^2 + 1$ (**D**) $x^2 + 5$

9. Factor: $(3y^2 + 4y - 15) =$ ....

    (A) $(3y + 3)(y - 5)$ **(B)** $(3y - 5)(y - 3)$

    (C) $(3y + 5)(y - 3)$ **(D)** $(3y - 5)(y + 3)$

10. If $5(x - 4) + 10 = 2(x - 8) - 3$, then the solution set is $x =$.........

    (A) $\{2\}$ **(B)** $\{3\}$ **(C)** $\{-3\}$ **(D)** $\{-2\}$

11. Factor: $(16a^2 - 25b^2) =$ ....

    (A) $(4a + 5b)(4a - 5b)$ **(B)** $(a - 25b)(16a + b)$

    (C) $(4a + 5b)(4a + 5b)$ **(D)** $(4a - 5b)(4a - 5b)$

12. Factor: $(64u^3 - 27) =$ ....

    (A) $(4u - 3)(16u^2 - 24u + 9)$ **(B)** $(4u - 3)(16u^2 + 12u + 9)$

    (C) $(4u - 3)(16u^2 - 12u + 9)$ **(D)** $(4u + 3)(16u^2 - 24u + 9)$

13. If $\dfrac{6}{a} = \dfrac{4}{6}$, then $a =$ ....

    (A) 12 **(B)** 4 **(C)** 6 **(D)** 9

14. $(3x^2)(2x^3)(x^{-5}) =$ ....

    (A) $6x^8$ **(B)** $6x^{10}$ **(C)** 6 **(D)** $6x^5$

15. $\quad 5\left(\dfrac{3}{2} + \dfrac{2}{7}\right)^{-1} =$ ....

    (A) $\dfrac{14}{5}$ **(B)** $\dfrac{5}{14}$ **(C)** $\dfrac{25}{7}$ **(D)** $\dfrac{7}{25}$

16. The additive inverse and the multiplicative inverse of $-\dfrac{4}{3}$ are .....and .....respectively.

    (A) $\dfrac{4}{3}$ $\;and\;$ $\dfrac{3}{4}$ **(B)** $\dfrac{4}{3}$ $\;and\;$ $-\dfrac{3}{4}$ **(C)** $-\dfrac{4}{3}$ $\;and\;$ $\dfrac{3}{4}$ **(D)** $-\dfrac{3}{4}$ $\;and\;$ $\dfrac{4}{3}$

17. $\left(\dfrac{16x^4y^8}{z^4}\right)^{\frac{1}{4}} =$ ....

    (A) $\dfrac{4xy}{z}$ **(B)** $\dfrac{2xy^2}{z}$ **(C)** $\dfrac{4xy^2}{z}$ **(D)** $\dfrac{8xy^2}{z}$

18. $\sqrt[5]{32\left(2u^2v^3\right)^0} =$ ....

    (A) $2u^2v^3$ **(B)** $4uv$ **(C)** 2 **(D)** $4u^2v^3$

19. $\dfrac{15m^4n^{-5}}{12m^3n^{-6}} =$ ....

    (A) $\dfrac{5mn}{4}$ **(B)** $\dfrac{5n}{4n}$ **(C)** $\dfrac{5m}{4n}$ **(D)** $\dfrac{4m}{5n}$

20. $\dfrac{a^{2(m-n)}}{a^{2(n-m)}} =$ ....

    (A) a^{-4m-4n} **(B)** 1 **(C)** a^{4m+4n} **(D)** a^{4m-4n}

The First Mid-Term Exam - Semester I - Year 1438/1439 H
SUBJECT: **General Mathematics** (Mathematics) code: **Math 101(100)**
Allowed Time: **1.5 Hour** DATE: **9 /02/1439** Full Marks: **20**

Name:_____ ID No.:_____

ANSWER THE FOLLOWING QUESTIONS: [Model 2]

Question 1. Evaluate The Following:

(a) $\left(2 - \dfrac{7}{4}\right)^{-1}$

(b) $\left(\dfrac{5}{4} \div \dfrac{15}{8}\right) \div \dfrac{6}{4}$

(c) $\left(\dfrac{9}{25}\right)^{-\frac{1}{2}}$

Question 2. Simplify The Following:

(1) $3y^3 - (-2y)^3$

(2) $(2y)\,(3y^3)\,(4y^2)$

(3) $\left(\dfrac{y^4 y^{-4}}{x^{-3}}\right)^{-2}$

(4) $\sqrt[n]{(2uv)^{2n}}$

(5) $2\sqrt{18} + 3\sqrt{2}$

(6) $\left(-\dfrac{8y^3}{27x^6}\right)^{\frac{2}{3}}$

(7) $\sqrt[3]{-64m^6 n^3 z^9}$

Question 3. Factor The Following:

(I). $16x^2 - 25y^2$

(II) $8u^3 + 27$

(III) $3y^2 - 4y - 15$

(VI) $6xy - wz - 2wy + 3xz$

Question 4.

(a) The additive inverse and the multiplicative inverse of $-\dfrac{7}{4}$ are .....and .....respectively.

(b) If $\dfrac{3}{4} = \dfrac{6}{x}$, then $x =$ ....

(c) Add: $3x^4 + 4x^3 + 2x + 4$ and $-3x^4 + 2x - 4$

(d) Multiply: $(2x - 3)(4x^2 + 6x + 9)$

(e) Subtract: $(x^2 - 3x + 6)$ from $(2x^3 + 3x - 6)$

(f) Solve: $3(x + 5) - 5 = 2x + 8$.

The End.