

**KING FAHD UNIVERSITY OF PETROLUUM AND MINERALS**  
**Dammam Community College and Diploma Program**  
**Math 011 and 003 - Term 031**

**Test I [ Code 001 ]**

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**Name :** \_\_\_\_\_ **ID#:** \_\_\_\_\_ **Section:** \_\_\_\_\_

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**Fill the following table with the correct answer:**

<b>Question</b>	<b>Correct answer</b>
<b>1</b>	
<b>2</b>	
<b>3</b>	
<b>4</b>	
<b>5</b>	
<b>6</b>	
<b>7</b>	
<b>8</b>	
<b>9</b>	
<b>10</b>	
<b>11</b>	
<b>12</b>	
<b>13</b>	
<b>14</b>	
<b>15</b>	
<b>16</b>	
<b>17</b>	
<b>18</b>	
<b>19</b>	
<b>20</b>	
<b>Total</b>	

Q1) The expression  $\frac{2}{\sqrt[5]{8x^2}}$  simplifies to :

a)  $\frac{\sqrt[5]{4x^3}}{x}$

b)  $\frac{2\sqrt[5]{4x^3}}{x}$

c)  $\frac{\sqrt[5]{4x^3}}{x^2}$

d)  $\frac{\sqrt[5]{8x^2}}{x^2}$

e)  $\frac{\sqrt[5]{4x^3}}{4x}$

Q2) If  $A = \left(-\frac{8}{27}\right)^{\frac{2}{3}}$  and  $B = \sqrt[3]{0.027}$ , then  $15AB$  is equal to

a) -1

b) 1

c) 2

d) -2

e) -3

Q3) If the real number  $x$  is more than 2 units from 4 but less than 7 units from 4, then

a)  $|x-4| > 2$  or  $|x-4| < 7$

b)  $|x-4| \geq 2$  or  $|x-4| \leq 7$

c)  $|x-4| \geq 2$  and  $|x-4| \leq 7$

d)  $2 \leq |x-4| \leq 7$

e)  $2 < |x-4| < 7$

Q4) Which one of the following statements is **TRUE** ?

- a) every integer is either prime or composite
- b) the multiplicative inverse of an irrational number is an irrational number
- c) the sum of two composite numbers is a composite number
- d) the product of two prime numbers is a prime number
- e) the reciprocal of  $-2\frac{3}{5}$  is  $-\frac{13}{5}$

Q5) If  $A = \left\{ -\sqrt{16}, -\frac{\pi}{2}, -\frac{3}{10}, 0.67, \sqrt{5}, 0, 1, 2, 3, -9, 51 \right\}$ , then A has

- a) 7 rational numbers
- b) 3 irrational numbers
- c) 3 prime numbers
- d) 1 composite number
- e) 1 perfect square

Q6) The property of real numbers illustrated in the statement  $(4.x).y = y.(4.x)$  is :

- a) the commutative property of addition
- b) the associative property of multiplication
- c) the commutative property of multiplication
- d) the distributive property
- e) the inverse property of multiplication

Q7) Which one of the following is **TRUE** ?

- a) the degree of the polynomial  $-xy + 2x^2y^3 + (xy)^3 - 2$  is 5
- b) 5 is a polynomial of degree 1
- c)  $\sqrt{3}$  is not a polynomial
- d)  $(2x+1)^3 - 8x^3$  is a polynomial of degree 2
- e)  $\frac{x^2-1}{x-1}$  is a polynomial

Q8) Which one of the following is **FALSE** ?

a)  $\sqrt{\sqrt[3]{3}} = \sqrt[6]{3}$

b)  $\frac{1}{\sqrt{3}-\sqrt{2}} = \sqrt{3} + \sqrt{2}$

c)  $(-2)^0 = 1$

d)  $\sqrt{\frac{9}{5}} = \frac{3\sqrt{5}}{5}$

e)  $(\sqrt[3]{3} + \sqrt[3]{2})^3 = 5$

Q9) Which one of the following is **TRUE** for any real number  $x$  ?

a)  $\sqrt[3]{-x^3} = -x$

b)  $\sqrt{(-2x)^2} = -2x$

c)  $\sqrt{16x^2} = 4x$

d)  $\sqrt[3]{64x^3} = 4|x|$

e)  $\sqrt{(-2x)^2} = 2x$

Q10) If  $A = \{z \mid z = x - |x|, \text{ where } x \text{ is an integer with } -4 < x \leq 0\}$  and  $B = \{-4, -2, 0\}$ , then

$A \cap B =$

a)  $\phi$

b)  $B$

c)  $A$

d)  $\{-6, -4\}$

e)  $\{-6, -4, -2\}$

Q11) If  $4x^2 - 12xy + ky^2$  is a perfect square trinomial, then  $k$  is equal to

- a) 3
- b) 9
- c) 2
- d) 4
- e) 8

Q12) One factor of  $6x^2 + xy - 2y^2 - 6x - 4y$  is

- a)  $2x + y - 2$
- b)  $2x + y + 2$
- c)  $2x - y - 2$
- d)  $3x + y - 2$
- e)  $3x - y - 2$

Q13) The expression  $\frac{a^{-2} - b^{-2}}{a + b}$  simplifies to

- a)  $\frac{a - b}{a^2 b^2}$
- b)  $\frac{ab}{a - b}$
- c)  $\frac{a^2 b^2}{a + b}$
- d)  $\frac{b - a}{a^2 b^2}$
- e)  $\frac{a + b}{ab}$

Q14) The expression  $\frac{1}{2x+1} + \frac{x^2 - 2x + 1}{x^2 + x - 6} \div \frac{2x^2 - x - 1}{x^2 - 2x}$  simplifies to

a)  $\frac{x^2 + 3}{2x^2 + 7x + 3}$

b)  $\frac{x^2 + 2}{2x^2 + x - 1}$

c)  $\frac{2x^2 + 1}{2x^2 - x + 2}$

d)  $\frac{2x^2 + x - 1}{x^2 + 2}$

e)  $\frac{x^2 - x - 1}{x^2 + 2x + 1}$

Q15) If  $\frac{S}{2} = (WH + LW + HL)$  then:

a)  $H = \frac{\frac{S}{2} - LW}{WL}$

b)  $H = \frac{\frac{S}{2} + LW}{W + L}$

c)  $H = \frac{S - LW}{2W + 2L}$

d)  $H = \frac{S - 2LW}{2W + 2L}$

e) *Non of these*

Q16) The scientific notation of the **product**  $(21 \times 10^{-7}) \cdot (200000)$  is

- a)  $42 \times 10^{-2}$
- b) 4.2
- c) 0.42
- d)  $4.2 \times 10^{-3}$
- e)  $4.2 \times 10^{-1}$

Q17) The following expression  $3\sqrt{125x^2} - 5|x|\sqrt{5} - 5\sqrt{20x^2}$   
Simplifies to:

- a)  $10|x|\sqrt{5}$
- b)  $-2x\sqrt{5}$
- c)  $20x\sqrt{2}$
- d) 0
- e) *Non of the these*

Q18) If  $1 < x < 2$ , then  $|5x - 3| - |x - 2|$  can be written without absolute value as:

- a)  $6x - 5$
- b)  $4x - 5$
- c)  $-4x + 1$
- d)  $-4x + 5$
- e)  $5 - 6x$

Q19) Which of the following is TRUE:

a)  $\frac{x}{x-4} + 1 = \frac{4}{x-4}$  has one real solution

b)  $2|3x-1| + 14 = 2$  has two real solutions

c)  $2x + \frac{2}{3} = \frac{6x+1}{3}$  is an identity equation

d)  $\frac{5}{x-3} - \frac{3}{x-2} = \frac{4}{x-3}$  is a conditional equation

e)  $2 + \frac{9}{y-3} = \frac{3y}{y-3}$  is a contradiction equation

Q20)  $(-3x^{-3}y^4)^{-2}(2^{-1}xy^0)^{-3}$  simplifies to:

a)  $\frac{-8}{9x^3y^8}$

b)  $\frac{72x^3}{y^8}$

c)  $\frac{8x^3}{9y^8}$

d)  $\frac{8x^3}{9y^{10}}$

e) *Non of these*