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| C:\Users\Ayham\Desktop\Untitled-1.jpg | **Saudi Electronic University** |
| **Final Examination** Date: 28.12.2014 | **Fundamentals of Mathematics****MATH 001** |
| **Student Name (ARABIC):****Student ID:****Instructions:**This exam duration is **2 hours.** This is NOT an open book exam.The use of calculators is permitted. The use of mobile phones is NOT permitted. Please answer all the **5** questions.The number of pages is **8 pages** including this page.**Marking Scheme:**

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| **Question** | **Score** |  |
| 1 | (30 Marks) |  |
| 2 | (4 Marks) |  |
| 3 | (4 Marks) |  |
| 4 | (4 Marks) |  |
| 5 | (8 Marks) |  | **Signature** |
| **TOTAL** |  |  |

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| **Question 1:** (30 points) Choose the correct answer, write your answer in the table below: |
| 1. The translation of “35 less than d” is:
 |
| 1. 35-d
 | 1. 35-d
 | 1. 35d
 | 1. 35+d
 |
| 1. The solution of $9=4x+41$ is:
 |
| 1. $2$
 | 1. $-7$
 | 1. $8$
 | 1. $-8$
 |
| 1. The slope of the line  is:
 |
| 1. 9
 | 1. -9
 | 1. 20
 | 1. 0
 |
| 1. The product of the **slopes** of two perpendicular lines is:
 |
| 1. 0
 | 1. 1
 | 1. -1
 | 1. -2
 |
| 1. The Linear function whose graph has the slope $-\frac{7}{11}$**8**and $y-intercept=-4$y-intercept $(0,4)$, is:
 |
| 1. $f\left(x\right)=8x+4$
 | 1. $f\left(x\right)=4-8x$
 | 1. $f\left(x\right)=4x+8$
 | 1. $f\left(x\right)=8-4x$
 |
| 1. The degree of polynomial $9x^{3}-10x^{5}+4x+7x^{2}+15$
 |
| 1. 3
 | 1. 5
 | 1. 9
 | 1. -10
 |
| 1. The simplification of $\frac{2^{3}×2^{3}}{2^{4}}$
 |
| 1. 2
 | 1. 4
 | 1. $\frac{1}{4}$
 | 1. 8
 |
| 1. The scientific notation of the number $0.000534$ is:
 |
| 1. $5.34×10^{6}$
 | 1. $5.34×10^{5}$
 | 1. $5.34×10^{-6}$
 | 1. $5.34×10^{-5}$
 |
| 1. The domain of the function $f\left(x\right)=\sqrt{5x+10}$:
 |
| 1. $\left[-2,\infty )\right.$
 | 1. $\left[2,\infty )\right.$
 | 1. $\left(-2,\infty \right)$
 | 1. $\left(2,\infty \right)$
 |
| 1. The $x-intercepts $intercepts of the equation $4x-6y=-12$ is:
 |
| $$\left(0,-2\right)$$ | 1. $\left(-3,0\right)$
 | 1. $\left(3,0\right)$
 | 1. $\left(0,2\right)$
 |
| 1. The value of $f\left(x\right)=2x^{2}-2x+2$$f\left(x\right)= x^{2}-3x+1$ when  is:
 |
| 1. 16
 | 1. 14
 | 1. 6
 | 1. 4
 |
| 1. The simplification of $-\left|-8\right|$is:
 |
| 1. -8
 | 1. 8
 | 1. 7
 | 1. -7
 |
| 1. The domain of the function $f\left(x\right)=\frac{5x-5}{x^{2}-36}$ is:
 |
| 1. $\left\{x:x is a real number and x\ne 6,-6\right\}$
 | 1. $\left\{x:x is a real number and x\ne 6,1\right\}$
 |
| 1. $\left\{x:x is a real number and x\ne 6\right\}$
 | 1. $\left\{x:x is a real number \right\}$
 |
| 1. The solution of $\left|x\right|=-8$$f\left(x\right)= x^{2}-3x+1$is:
 |
| 1. 8
 | 1. 8,-8
 | 1. -8
 | 1. No Solution
 |
| 1. The result of the division$\frac{\sqrt[3]{16x^{5}y^{6}}}{\sqrt[3]{2x^{2}y^{3}}}$ is:
 |
| 1. $2xy$
 | 1. $2x^{2}y$
 | 1. $4xy^{2}$
 | 1. $8x^{2}y^{2}$
 |
| 1. The solution of $x^{2}=-36$$x^{2}+2x+1$ is:
 |
| 1. $x=\pm 6$
 | 1. $x=6$
 | 1. $x=\pm 6i$
 | 1. $x=6i$
 |
| 1. Which of the following correspondences is not function:
 |
|

|  |  |
| --- | --- |
| Domain | Range |
| 2 | 6 |
| 3 | 5 |
| 4 |  |

 |

|  |  |
| --- | --- |
| Domain | Range |
| -1 |  |
| 0 | 2 |
| 1 |  |

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|  |  |
| --- | --- |
| Domain | Range |
| 7 | 0 |
| 8 | 1 |
| 9 | 2 |

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|  |  |
| --- | --- |
| Domain | Range |
| -5 | 0 |
| 0 | 1 |
| 5 |  |

 |
| 1. The Greatest Common Factor of $12x^{6}$ and $20x^{2}$ is:
 |
| 1. $2x$
 | 1. $4x^{2}$
 | 1. $2x^{2}$
 | 1. $4x$
 |
| 1. The interval notation for the set $\left\{x:3\leq x<6\right\}$ is:
 |
| 1. $\left[3,6\right]$
 | 1. $\left[3,6)\right.$
 | 1. $\left.(3,6\right]$
 | 1. $\left(3,6\right)$
 |
| 1. The result of addition $\frac{6x}{x-6}+\frac{3}{6-x}$$2^{4}∙2^{3}$is **:**
 |
| 1. $\frac{6x+3}{0}$
 | 1. $\frac{3(2x-1)}{x-6}$
 | 1. $\frac{3x}{x-6}$
 | 1. $\frac{3(2x+1)}{x-6}$
 |

|  |  |  |  |  |  |  |  |  |  |  |
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| Question | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Answer |  |  |  |  |  |  |  |  |  |  |
| Question | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| Answer |  |  |  |  |  |  |  |  |  |  |

**Question 2:** ( 4 points)

Perform and Simplify the following:

1. $\frac{x^{2}+x-6}{x^{2}-x-1}$
2. $\frac{2x+4}{x-1}÷\frac{x+2}{3(x-1)^{2}}$

**Question 3:** (4 points)

Solve the following equations:

1. $\left|x+5\right|=\left|x-6\right|$
2. $x^{2}-4x+8=0$

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| **Question 4:** (4 points) Solve the following inequalities: |

1. $-7<3x+2\leq 9$
2. $\left(x-2\right)\left(x+4\right)\geq 0$

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| **Question 5:** (8 points) |

1. Solve graphically the system $\left\{\begin{array}{c}x+y=3\\-x+y=4\end{array}\right.$ and then classify the system as consistent or inconsistent and the equations as dependent or independent.
2. Solve the following system of equations:

$$\left\{\begin{array}{c}4x-3y=-2\\2x-y=5\end{array}\right.$$