Subject: Mathematics for Engineer

Quiz number: 2

Number of question: 20

Structure:

* level 1(knowledge & comprehension): 4;
* level 2 (application & analysis): 12;
* level 3 (synthesis & evaluation): 4.

Time: 35’.

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| QN=1 | (Level 1) Find the average value of the function on the interval [-1,3]. |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | C |
| PTS: |  |
| CHAPTER: | 4 |
| MIX CHOICES: | Yes |

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| QN=2 | (Level 2) Evaluate the integral. |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | C |
| PTS: |  |
| CHAPTER: | 4 |
| MIX CHOICES: | Yes |

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| QN=3 | (Level 2) A practical moves along a line so that its velocity at time t is (measured in meters per second).  Find the displacement of the partical during the time . |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | D |
| PTS: |  |
| CHAPTER: | 4 |
| MIX CHOICES: | Yes |
| Level | 2 |



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| QN=4 | Use the Midpoint Rule with *n* = 10 to approximate the integral. |
| a. | 124,16 |
| b. | 134,15 |
| c. | 224,16 |
| d. | 24,16 |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 4 |
| MIX CHOICES: | Yes |

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| QN=5 | (Level 2) If  and then is |
| a. | 9 |
| b. | -6 |
| c. | 3 |
| d. | -3 |
| e. | -9 |
| f. |  |
| ANS: | E |
| PTS: |  |
| CHAPTER: | 4 |
| MIX CHOICES: | Yes |

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| QN=6 | (Level 2) Find the average value of the function *f* (*x*) in the interval [-1,2],  f(x) = 3x2 –2x +3 |
| a. | 0 |
| b. | 5 |
| c. |  |
| d. |  |
| e. | 15 |
| f. |  |
| ANS: | B |
| PTS: |  |
| CHAPTER: | 6 |
| MIX CHOICES: | Yes |

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| QN=7 | (Level 2) Evaluate the integral. |
| a. | -39 |
| b. | -13 |
| c. | 13 |
| d. | 39 |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 6 |
| MIX CHOICES: | Yes |

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| QN=8 | (Level 2) Evaluate the integral. |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 6 |
| MIX CHOICES: | Yes |

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| QN=9 | (Level 3) Evaluate the integral. |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | D |
| PTS: |  |
| CHAPTER: | 6 |
| MIX CHOICES: | Yes |

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| QN=10 | (Level 1) Which of the following integrals is convergent? |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 6 |
| MIX CHOICES: | Yes |

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| QN=11 | (Level 3) Find the area of the region bounded by the curves . |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | B |
| PTS: |  |
| CHAPTER: | 7 |
| MIX CHOICES: | Yes |

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| QN=12 | (Level 2) Find the volume of a right circular cone with height *h* = 36 and base radius *r* = 5. |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | C |
| PTS: |  |
| CHAPTER: | 7 |
| MIX CHOICES: | Yes |

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| QN=13 | (Level 2) The region R enclosed by the curves y = x and y=x2 is rotated about the line  x=-2. Find the volume of the resulting solid. |
| a. | 29/6 |
| b. | 29π/6 |
| c. | 5π |
| d. | 5π/6 |
| e. |  |
| f. |  |
| ANS: | B |
| PTS: |  |
| CHAPTER: | 7 |
| MIX CHOICES: | Yes |

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| QN=14 | (Level 2) Find the number(s) *a* such that the average value of the function on the interval [0, *a*] is equal to 3.  Select the correct answer(s). |
| a. | 1, 0, -2 |
| b. | 1, 0 , 3 |
| c. | 1, 0, 2 |
| d. | 3 |
| e. | -1, 0, 2 |
| f. |  |
| ANS: | E |
| PTS: |  |
| CHAPTER: | 7 |
| MIX CHOICES: | Yes |

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| QN=15 | (Level 3) Find the radius of convergence and interval of convergence of the series |
| a. | (-1/2,1/2] |
| b. | (1/2,1/2] |
| c. | [-1/2,1/2] |
| d. | (-1/2,-1/2] |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 7 |
| MIX CHOICES: | Yes |

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| QN=16 | (Level 2) Use the Integral Test to determine whether the series is convergent or divergent.  and |
| a. | S1 is the divergent series; S2 is the convergent series |
| b. | S2 is the divergent series; S1 is the convergent series |
| c. | S1 is the convergent series; S2 is the convergent series |
| d. | S1 is the divergent series; S2 is the divergent series |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 8 |
| MIX CHOICES: | Yes |

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| QN=17 | (Level 1) Which of the following series is convergent? |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | B |
| PTS: |  |
| CHAPTER: | 8 |
| MIX CHOICES: | Yes |

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| QN=18 | (Level 2) If the following series converges, determine its sum.  . |
| a. | 0.75 |
| b. | 1 |
| c. | 0 |
| d. | 1.33 |
| e. | Divergent |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 8 |
| MIX CHOICES: | Yes |

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| QN=19 | (Level 1) If the following series converges, determine its sum. |
| a. | 0.75 |
| b. | 0.5 |
| c. | 0 |
| d. | 2 |
| e. | Divergent |
| f. |  |
| ANS: | E |
| PTS: |  |
| CHAPTER: | 8 |
| MIX CHOICES: | Yes |

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| QN=20 | (Level 3) Find the Taylor polynomial T3 for the function  at the number . |
| a. |  |
| b. |  |
| c. |  |
| d. |  |
| e. |  |
| f. |  |
| ANS: | A |
| PTS: |  |
| CHAPTER: | 8 |
| MIX CHOICES: | Yes |