|  |  |
| --- | --- |
| QN=1 (11890) | (See picture)  [file:11890.jpg] |
| a. | None of them |
| b. | (i) |
| c. | (iii) |
| d. | (ii) |
| e. | (iv) |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | 1.1 |
| LO: | LO1.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=2 (11899) | Write equation for the graphs that are obtained from stretch the graph of y = f(x) vertically by a factor of 5 and then shift 1 unit upward |
| a. | y = 5f(x) + 1 |
| b. | y = 5f(x) – 1 |
| c. | y = f(5x) + 1 |
| d. | y = f(x/5) + 1 |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 1.2 |
| LO: | LO1.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=3 (11915) | (See picture)  [file:11915.jpg] |
| a. | 0 |
| b. | -1 |
| c. | 2 |
| d. | -2 |
| e. | 1 |
| f. | None of the other choices is correct |
| ANSWER: | E |
| MARK: | 1 |
| UNIT: | 2.3 |
| LO: | LO1.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=4 (11946) | (See picture)  [file:11946.jpg] |
| a. | -2 |
| b. | 2 |
| c. | 4 |
| d. | 0 |
| e. | -4 |
| f. | None of others |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 2.4 |
| LO: | LO1.5 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=5 (11982) | (See picture)  [file:11982.jpg] |
| a. | 4x+2h+1 |
| b. | 4x-2h-1 |
| c. | 4x-2h+1 |
| d. | 2x+2h+1 |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 3.1-3.2 |
| LO: | LO2.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=6 (12014) | (See picture)  [file:12014.jpg] |
| a. | 197/8 |
| b. | 187/8 |
| c. | 101/4 |
| d. | 91/4 |
| e. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | 3.3 |
| LO: | LO2.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=7 (15858) | (See picture)  [file:15858.jpg] |
| a. | t = 2, 3 |
| b. | t = 1, 3 |
| c. | t = 3, 5 |
| d. | t = 4 |
| e. | None of the other choices is correct |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | 3.4 |
| LO: | LO2.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=8 (12040) | (See picture)  [file:12040.jpg] |
| a. | None determined |
| b. | 0 |
| c. | -2 |
| d. | -6 |
| e. | -5 |
| f. | None of the other choices is correct |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | 3.6 |
| LO: | LO2.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=9 (12077) | (See picture)  [file:12077.jpg] |
| a. | (iv) |
| b. | (iii) |
| c. | All of the other choices are incorrect |
| d. | (i) |
| e. | (ii) |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 3.8 |
| LO: | LO3.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=10 (12100) | (See picture)  [file:12100.jpg] |
| a. | 0.06 |
| b. | 0.12 |
| c. | 0.02 |
| d. | 0.006 |
| e. | None of the others |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.1 |
| LO: | LO3.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=11 (16634) | (210006) (See picture)  [file:16634.jpg] |
| a. | 0.5 |
| b. | 1 |
| c. | 0.5 and 1 |
| d. | None of the other choices is corect |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | 4.2 |
| LO: | LO4.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=12 (12147) | (See picture)  [file:12147.jpg] |
| a. | Absolute maximum value is 3 and absolute minimum is 0 |
| b. | Absolute maximum value is 1 and absolute minimum is 0 |
| c. | Absolute maximum value is 2 and absolute minimum is 0 |
| d. | Absolute maximum value is 0 and absolute minimum is -1 |
| e. | Absolute maximum value is 0 and absolute minimum is -2 |
| f. | None of the other choices is correct. |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.3 |
| LO: | LO3.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=13 (12200) | (See picture)  [file:12200.jpg] |
| a. | Relative minimum at (-1, -4); relative maximum at (1, 4) |
| b. | Relative maximum at (0, 0), No relative minimum |
| c. | Relative minimum at (-1, -4); relative maximum at (0, 0) |
| d. | Relative maximum at (-1, -4); relative minimum at (1, 4) |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.5 |
| LO: | LO3.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=14 (11959) | (See picture)  [file:11959.jpg] |
| a. | 2/15 |
| b. | -2/15 |
| c. | 0 |
| d. | infinity |
| e. | -5/2 |
| f. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.6 |
| LO: | LO1.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=15 (12246) | (See picture)  [file:12246.jpg] |
| a. | -28 |
| b. | -2 |
| c. | -14 |
| d. | -82 |
| e. | -9 |
| f. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.7 |
| LO: | LO3.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=16 (12962) | (See picture)  [file:12962.jpg] |
| a. | - 1.2143 |
| b. | - 1.2100 |
| c. | - 1.2741 |
| d. | - 1.3140 |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 4.9 |
| LO: | LO3.6 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=17 (12464) | (See picture)  [file:12464.jpg] |
| a. | 19.75 |
| b. | 18.75 |
| c. | 19.45 |
| d. | 18.45 |
| e. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | 1.1 (v2) |
| LO: | LO4.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=18 (12469) | (See picture)  [file:12469.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 1.2 (v2) |
| LO: | LO4.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=19 (12504) | (See picture)  [file:12504.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 1.3 (v2) |
| LO: | LO4.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=20 (12480) | (See picture)  [file:12480.jpg] |
| a. | 259/12 |
| b. | 79/4 |
| c. | 275/12 |
| d. | 81/4 |
| e. | None of the other choices is correct |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | 1.4 (v2) |
| LO: | LO4.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=21 (12520) | (See picture)  [file:12520.jpg] |
| a. | (iii) |
| b. | (ii) |
| c. | (iv) |
| d. | (i) |
| e. | None of the other choices is correct |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | 1.5 (v2) |
| LO: | LO4.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=22 (15850) | (See picture)  [file:15850.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| e. | (v) |
| f. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | 3.1 (v2) |
| LO: | LO4.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=23 (12580) | (See picture)  [file:12580.jpg] |
| a. | 24.925 |
| b. | 64.946 |
| c. | 49.892 |
| d. | 74.776 |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 3.6 (v2) |
| LO: | LO4.5 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=24 (12589) | (See picture)  [file:12589.jpg] |
| a. | 1.25 |
| b. | 2.5 |
| c. | 0.2 |
| d. | None of the other choices is correct |
| e. | Does not exist |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | 3.7 (v2) |
| LO: | LO4.6 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=25 (11728) | (See picture)  [file:11728.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | none of the other choices is true |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA1.1 |
| LO: | LO5.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=26 (11795) | (See picture)  [file:11795.jpg] |
| a. | a – 2b + c = 0 |
| b. | a – 2b +c is not 0 |
| c. | b – 2c + a is not 0 |
| d. | b – 2c + a = 0 |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA1.2 |
| LO: | LO5.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=27 (11764) | (See picture)  [file:11764.jpg] |
| a. | This system has no solution |
| b. | This system has a unique solution |
| c. | Not enough information |
| d. | This system has infinitely many solutions |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA1.2 |
| LO: | LO5.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=28 (11756) | How many solutions must a homogeneous linear system of 6 equations in 7 unknowns have? |
| a. | infinitely many solutions |
| b. | no solutions |
| c. | exactly 7 solutions |
| d. | None of the other choices is correct |
| e. | exactly one solution |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA1.3 |
| LO: | LO5.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=29 (11829) | (See picture)  [file:11829.jpg] |
| a. | -4 |
| b. | 4 |
| c. | 1 |
| d. | -1 |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA2.1 |
| LO: | LO6.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=30 (15848) | (See picture)  [file:15848.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA2.2 |
| LO: | LO6.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=31 (15607) | (See picture)  [file:15607.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | None of the other choices is correct |
| d. | (iii) |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA2.3 |
| LO: | LO6.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=32 (15836) | (See picture)  [file:15836.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA2.4 |
| LO: | LO7.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=33 (15669) | (See picture)  [file:15669.jpg] |
| a. | Reflection in the x-axis. |
| b. | Reflection in the y-axis. |
| c. | Reflection about y = - x. |
| d. | Rotation through 180 degrees |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA2.6 |
| LO: | LO6.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=34 (15673) | (See picture)  [file:15673.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| e. | None of the other choices is correct |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA2.6 |
| LO: | LO6.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=35 (13671) | (See picture)  [file:13671.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (i) and (iii) |
| e. | None of the other choices is correct |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | LA3.2 |
| LO: | LO7.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=36 (13655) | (See picture)  [file:13655.jpg] |
| a. | [1 -3 -6] |
| b. | [1 2 2] |
| c. | [1 -2 2] |
| d. | [-1 -2 2] |
| e. | None of the other choices is correct |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | LA3.2 |
| LO: | LO7.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=37 (13644) | (See picture)  [file:13644.jpg] |
| a. | (iii) |
| b. | (ii) |
| c. | All of the other choices are incorrect |
| d. | (i) |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA3.3 |
| LO: | LO7.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=38 (12439) | (See picture)  [file:12439.jpg] |
| a. | u is an eigenvector of A |
| b. | v is an eigenvector of A |
| c. | Both u and v are eigenvectors of A |
| d. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA3.3 |
| LO: | LO7.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=39 (13385) | (See picture)  [file:13385.jpg] |
| a. | -3 |
| b. | 16 |
| c. | 2 |
| d. | None of the other choices is correct |
| e. | 0 |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | LA4.1 |
| LO: | LO8.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=40 (13727) | Let A be the point in the plane 2x – y –z = 6 that is closest to the point (1, -2, 3). Determine the second coordinate of A. |
| a. | -17/6 |
| b. | 5/3 |
| c. | None of the other choices is correct |
| d. | 4/6 |
| e. | -5/3 |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA4.2 |
| LO: | LO8.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=41 (13423) | Find the parametric equation of the line through the point A(1, 1, 0) and perpendicular to the vectors  u = [1, 1, 1], v = [2, 1, 3] |
| a. | x = 1+2t, y = 1-t, z = -t |
| b. | x = 1+2t, y = 1-t, z = t |
| c. | x = 1+2t, y = 1+t, z = -t |
| d. | x = 1+2t, y = 1+t, z = t |
| e. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA4.2 |
| LO: | LO8.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=42 (13443) | The area of the paralellogram determined by the vectors u and v is 100. Find the area of the paralellogram determined by the vectors u and 2u+3v. |
| a. | 500 |
| b. | None of the other choices is correct |
| c. | 0 |
| d. | 300 |
| e. | 200 |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA4.3 |
| LO: | LO8.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=43 (16624) | Find the projection of the vector u = [1; -2; 3] on the vector v = [1; -1; 0]. |
| a. | [-3/2; -3/2; 0] |
| b. | [3/2; 3/2; 0] |
| c. | [-3/2; 3/2; 0] |
| d. | [3/2; -3/2; 0] |
| e. | None of other choices is correct |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA4.4 |
| LO: | LO8.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=44 (13708) | (See picture)  [file:13708.jpg] |
| a. | (ii) |
| b. | None of the other choices is correct |
| c. | (i) and (ii) |
| d. | (i) |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA5.1 |
| LO: | LO9.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=45 (13473) | Let u =(0, 1, 1), v = (1, 1, -1). Which of the following vectors belong to span{u, v}:  x = (1, 3, -1), y = (0, 2, 3) |
| a. | Both x and y |
| b. | Only x |
| c. | All of the other choices are incorrect |
| d. | Only y |
| ANSWER: | C |
| MARK: | 1 |
| UNIT: | LA5.1 |
| LO: | LO9.1 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=46 (13484) | (See picture)  [file:13484.jpg] |
| a. | (i) |
| b. | (ii) |
| c. | (iii) |
| d. | (iv) |
| e. | None of the other choices is correct |
| ANSWER: | B |
| MARK: | 1 |
| UNIT: | LA5.2 |
| LO: | LO9.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=47 (13506) | (See picture)  [file:13506.jpg] |
| a. | 2 |
| b. | 4 |
| c. | 3 |
| d. | 1 |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA5.2 |
| LO: | LO9.2 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=48 (13514) | (See picture)  [file:13514.jpg] |
| a. | 0 |
| b. | 1 |
| c. | -1 |
| d. | 2 |
| e. | None of the other choices is correct |
| ANSWER: | E |
| MARK: | 1 |
| UNIT: | LA5.3 |
| LO: | LO9.4 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=49 (13532) | Let A be a 5x7 matrix. Which of the following statements are true?  (i) Matrix A can have independent columns  (ii) Matrix A can have independent rows  (iii) The null space of A can have dimension 1. |
| a. | (ii) |
| b. | (i) |
| c. | (iii) |
| d. | None of the other choices is correct |
| ANSWER: | A |
| MARK: | 1 |
| UNIT: | LA5.4 |
| LO: | LO9.3 |
| MIX CHOICES: | Yes |

|  |  |
| --- | --- |
| QN=50 (13675) | Which of the following statements are true for every 4 x 4 matrix A:  (i) det (- A) = - det A  (ii) det (2A) =16 det A |
| a. | Both (i) and (ii) are true |
| b. | Only (i) is true |
| c. | None of (i) and (ii) is true |
| d. | Only (ii) is true |
| ANSWER: | D |
| MARK: | 1 |
| UNIT: | LA3.1 |
| LO: | LO7.1 |
| MIX CHOICES: | Yes |