**D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**Q. Paper Code:**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

**S. Y. B. Tech (Semester-III)**

**END SEMESTER EXAMINATION, OCT./NOV.- 2021-22**

**COURSE NAME:** Linear Algebra **COURSE CODE:**201AIMLL201

Seat No:

**Day and Date: Monday, 17/01/2022**

**Time:11am to 12.30pm Max. Marks- 50**

**OBJECTIVE**

***Instructions:***

1) Each question carries **2 marks**.

2) **Non-Programmable** Calculator is allowed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No** | **Statement of Question** | |  | **Correct**  **Option** |
| Q. 1) | Let W be subspace of vector space V, then which of the following statement is true | | A |
| A)  1.  2. If and  are vector in W, then is in W.  3. If kis a scalar and  is a vector in W, then is in W | B)  1.  2. If and  are vector in W, then is in W.  3. If kis a scalar and  is a vector in W, then is in W |
| C)  1.  2. If and  are vector in W, then is not in W.  3. If kis a scalar and  is a vector in W, then is in W | D)  1.  2. If and  are vector in W, then is not in W.  3. If kis a scalar and  is a vector in W, then is not in W |
| Q. 2) | Let V be a vector space and  be non-empty set of vectors in V. If there exist scalarsnot all zero, such that  then the set S is called as | | B |
| A) Linearly dependent set in V | B) Linearly independent set in V. |
| C) Both linearly dependent set in V as well as linearly independent set in V | D)None of these |
| Q.3) | Let V be a vector space. If W1 and W2 are subspace of V, then | | B |
| A)  Intersection is also a subspace of V and union is also a subspace of V. | B)  Intersection is also a subspace of V and union  is not a subspace of V. |
| C)  Intersection is not a subspace of V and union is not a subspace of V. | D)  Intersection is not a subspace of V and union is a subspace of V |
| Q. 4) | The dimension of zero vector space is | | A |
| A) 0 | B) 1 |
| C) finite | D) infinite |
| Q. 5) | Which of the following statement is true | | C |
| A) Elementary row operations change the row space or the null space of a matrix | B) Elementary row operations do not change the row space but change the null space of a matrix |
| C) Elementary row operations do not change the row space or the null space of a matrix | D) Elementary row operations change the row space but do not change the null space of a matrix |
| Q. 6) | The non-zero row vectors in any row echelon form of a matrix A form a basis for | | B |
| A) The column space of A. | B) The row space of A. |
| C) Normal form | D) None of these |
| Q. 7) | Calculate the nullity of the matrix A, if A matrix is of order 4\*6 and rank (A) =3 | | D |
| A) 1 | B) 2 |
| C) 4 | D) 3 |
| Q. 8) | If V is a finite dimensional vector space, then the relation between dimension of any two bases of V is | | A |
| A) The same number of vectors. | B) infinite number of vectors |
| C) Different number of vectors | D) None of these |
| Q. 9) | If a set of vector is linearly dependent then | | A |
| A) At least one member can be expresses as linear combination of the remaining vectors | B) Exactly one member can be expresses as linear combination of the remaining vectors |
| C) No member can be expresses as linear combination of the remaining vectors | D) None of these |
| Q. 10) | The empty set  is defined to be | |  | C |
| A) Linearly dependent | B) Linear combination |
| C) Linearly independent | D) None of these |
| Q. 11) |  | | A |
| A) | B) |
| C) | D)None of these |
| Q.12) |  | | B |
| A) | B) |
| C) | D) |
| Q. 13) | Calculate the distance between  with Euclidean inner product | | D |
| A) | A) |
| C) | C) |
| Q. 14) |  | | B |
| A) 1 | B) 2 |
| C) 3 | D) 4 |
| Q. 15) | If u and v are orthogonal vectors in an inner product space, then generalized theorem of Pythagoras is | | A |
| A) | B) |
| C) | D) |
| Q. 16) | For the fuzzy set . Scalar cardinality is | | D |
| A) 0.13 | B) 13 |
| C) 6 | D) 1.3 |
| Q. 17) | For the fuzzy set A, is defined as | | D |
| A) | B) |
| C) | D) |
| Q. 18) | In fuzzy set A, the compliment of membership grad  is  A | |  |
| A) | B) |
| C) | D) |
| Q. 19) | Height of the fuzzy set  is | | A |
| A) 0.9 | B) 0.1 |
| C) 0.3 | D) 0.29 |
| Q. 20) | The support of fuzzy set A is nothing but | | C |
| A) Strong one cut of A. | B) Zero cut of A. |
| C) Strong zero cut of A. | D) One cut of A. |
| Q.21) | If & be two fuzzy sets as follows    and    The evaluate | | A |
| A) | B) |
| C) | D) |
| Q. 22) | Fuzzy sets A defined on X is | | B |
| A) | B) |
| C) | D) |
| Q. 23) | Fuzzy sets A and B given by | | B |
| A) 0.4974 | B) 0.7222 |
| C) 3.97 | D) 4.974 |
| Q. 24) | Fuzzy sets A and B given by | | D |
| A) | B) |
| C) | D) |
| Q. 25) | The degree of subset hood  is defined as | | C |
| A) | B) |
| C) | D) |