# Mid Semester Examination: Semester II
# Subject: BCA - F1002 Basic Mathematics-II

Attempt all the questions. Full marks : 20

Duration: 1 Hr

* Required

1. Name

_____

2. Class roll.

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3. University roll no.

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4. Session

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5. A group (M, *) is said to be Abelian if * 2 points

*Mark only one oval.*

- x+y=y+x
- x*y = y*x
- x+y= x
- Y*x = x+y

6. Rank of a matix is nothing but 2 points

*Mark only one oval.*

- Number of zero rows in that matrix.
- Number of zero rows in its echelon form of matrix.
- Number of non-zero rows in that matrix.
- Number of non-zero rows in its echelon form of the matrix.

7. The system of Linear equations x+2y-z=3, 3x-y+2z=1, 2x-2y+3z=2, x-y+z=-1 have 2 points

*Mark only one oval.*

- A unique solution
- No solution
- An infinite number Of solutions
- Exactly two distinct solutions

8. If the direction ratios of any line are 1, 2 ,3. What will be the direction cosines? 2 points

*Mark only one oval.*

- 1/√16, 3/√16, 2/√16
- 1/√6, 2/√6 , 3/√6
- 1/√14, 2/√14, 3/√14
- None of these.

9. The two operations defined in a vector space are 2 points

*Mark only one oval.*

- Scalar composition, vector multiplication
- Vector multiplication, scalar composition
- Vector addition, scalar multiplication
- All of these

10. Every field is an integral domain. 1 point

*Mark only one oval.*

- T
- F

11. The set of vectors in a vector space V(F) is said to be basis of vector space if S is 1 point

*Mark only one oval.*

- Linearly dependent
- Linearly independent
- Either 1 or 2
- Both 1 and 2

12. How many properties can be held by a group? 1 point

*Mark only one oval.*

- 2
- 3
- 5
- 4

13. The quadratic form 2x^2+2y^2+3z^2-4yz-4zx+2xy is 1 point

*Mark only one oval.*

- Positive definite
- Negative definite
- Indefinite
- None of these

14. The algebraic structure (G, *) is said to be semi group if it satisfied the axioms. 1 point

*Mark only one oval.*

- Closure
- Associative
- Existence of identity
- Both 1 and 2

15. A sphere is the locus of a point which moves in a space in such a way that its distance from a varying point is constant. 1 point

*Mark only one oval.*

- T
- F

16. If line A is parallel to the plane B. Then this implies that 1 point

*Mark only one oval.*

- Normal to B is perpendicular to the line A.
- Perpendicular to B is parallel to the line A
- Both 1 and 2
- None of these

17. The equation to the straight line through the point (a, b, c) and parallel to oz is x=a and y= b 1 point

*Mark only one oval.*

- T
- F

18. The centre and radius of the sphere x^2+y^2+z^2+6x-8y +4z-7=0 is 1 point

*Mark only one oval.*

- (4, -3, -2) ; 6
- (-2, 4 , -3) ; 7
- (-3, 4,-2) ; 6
- (4, 4,-2) ; 5

19. The angle between the planes x+y+z= 4, x-2y-z=3. 1 point

*Mark only one oval.*

- Cos(t) =√2/3
- Cos(t) = 2/√3
- Cos(t) =2√2/3
- Cos(t) = 2/3√3