Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination (Online) – Dec, 2021

Program: BBA LM+AVM **Semester: I**
Subject/Course: Business Mathematics **Max. Marks: 100**
Course Code: DSQT 1001 **Duration: 3 Hours**

Section-A

1.	If A={1,2,3,4,6} and B={6,7,8} then $A \cup B$ will be (a) {1,2,3,4,6,7,8} (b) {6,7,8} (c) { } (d) {6}	**2**	**CO1**
2.	If A and B are two matrices, then which of the following property is true? (a) A + B ≠ B + A (b) $(A^t)^t \neq A$ (c) AB ≠ BA (d) all are true	**2**	**CO1**
3.	Derivative of x^2 is (a) 2x (b) 1/x (c) 1/2x (d) None of the above	**2**	**CO1**
4.	Value of $\int 2x^n dx$ (a) $2(\frac{x^{n+1}}{n+1}) + c$ (b) $2nx^{n-1} + c$ (c) $2(\frac{nx^{n-1}}{n-1}) + c$ (d) Can't determined	**2**	**CO1**
5.	If x, x+2, 2x are in arithmetic progression, then the value of x can be (a) 1 (b 4 (c) Both (a) and (c) (d) Can't determine	**2**	**CO1**
6.	If $\begin{vmatrix} x & 4 \\ -3 & 2 \end{vmatrix}$=2 then the value of x will be (a) 3 (b) 7	**2**	**CO1**

	(c) -5 (d) None of the above		
7.	If u and v are the functions of x then by product rule of differentiation (a) $\frac{d}{dx}(u.v) = \frac{d}{dx}u + \frac{d}{dx}v$ (b) $\frac{d}{dx}(u.v) = \frac{d}{dx}u - \frac{d}{dx}v$ (c) $\frac{d}{dx}(u.v) = u\frac{d}{dx}v + v\frac{d}{dx}u$ (d) $\frac{d}{dx}(u.v) = u\frac{d}{dx}u + v\frac{d}{dx}v$	**2**	**CO1**
8.	If there is only one Row in a matrix, it is called (a) Row Matrix (b) Column Matrix (c) Square Matrix (d) None of the above	**2**	**CO1**
9.	If a, b, c are in arithmatic progression, then which of the following is true (a) b-a=b-c (b) b-c=b-a (c) b-a=c-b (d) None of the above	**2**	**CO2**
10.	The series 4, 16, 64, 256…….. is in (a) Arithmetic Progression (b) Geometric Progression (c) Both (a) & (b) (d) None of these	**2**	**CO2**

Section-B

Q.No	**Question**	**Marks**	**COs**
11.	Explain the importance of mathematics in business.	5	CO1
12.	Using product rule find the derivative of (2x+3)(x-7).	5	CO1
13.	Find two terms between $\frac{1}{3}$ and $\frac{1}{81}$ such that the series are in G.P.	5	CO4
14.	Integrate the function $2x^2 + 3x - 7$ with respect to x.	5	CO4

Section-C

15.	For the set A= {2,4,6,8} and B={4,5,7} find $A \cup B$ and $A \cap B$.	10	CO2
16.	If A = $\begin{bmatrix} 2 & -4 & 3 \\ -3 & -1 & 0 \\ 1 & 3 & 5 \end{bmatrix}$ then find$\|A\|$.	10	CO2

17.	Find the 10^{th} term of the series 10, 8, 6, 4…… **'OR'** Find the 6^{th} term of the series 2, 4, 8, 16……..	10	CO3
	Section-D		
18.	Solve the following equation using Cramer's rule. $x+y+z=20$ $2x+y-z=23$ $3x+y+z=46$	15	CO3
19.	If the 10th term of an arithmetic series is $\frac{1}{20}$ and its 20th term is $\frac{1}{10}$, then find the 18^{th} term of the series. **'OR'** If $A=\begin{bmatrix} 2 & -4 & 3 \\ -3 & -1 & 0 \\ 1 & 3 & 5 \end{bmatrix}$ and $B=\begin{bmatrix} 1 & 2 & 3 \\ -3 & 0 & 4 \\ -2 & 2 & -2 \end{bmatrix}$ then find $A+B$.	15	CO4