MTH631 Real Analysis II

Question No : 1 of 26

The singleton set is always —

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Answer (Please select your correct option)

- disconnected
- polygonally disconnected
- connected
- None of these

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Question No : 2 of 26

Any polygonally connected set either it is open or not, is always _____

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Answer (Please select your correct option)

- connected
- disconnected
- a region
- None of these

MTH631 Real Analysis II

Question No : 3 of 26 **Marks:** 1 (Budgeted Ti

For the function $f(x,y)=\frac{xy}{x^2+y^2}$, the limit of $f(x,y)$ as $(x,y)\to(0,0)$ along the line $y=x$ is ——

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Answer (Please select your correct option)

- $\frac{1}{2}$
- $-\frac{1}{2}$
- 0
- 1

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Question No : 1 of 26 **Marks: 1 (Budgeted**

If f and g are continuous functions at the point X_0 in R^*, then $\frac{f}{g}$ is continuous at X_0 provided that _____

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Answer (Please select your correct option)

- $g(X_0) = 0$
- $g(X_0) \neq 0$
- $f(X_0) = g(X_0) = 0$
- None of these

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Question No : 5 of 26 Marks: 1 (Budgeted Ti

Suppose $U_0 \in T$ is a limit point of T. g is continuous at U_0 and f is continuous at $X_0 = G(U_0)$. Then ——— is continuous at U_0.

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Answer (Please select your correct option)

- $f \circ g$
- $\frac{f}{g}$
- $\frac{g}{f}$
- None of these

MTH631 Real Analysis II

Question No : 6 of 26

Marks: 1 (Budgeted T

A set A ⊆ R of real numbers is ———— if there exists a real number M ⊆ R, such that $x \leq M$ for every $x \in A$.

Answer (Please select your correct option)

- bounded below
- uniformly continuous
- bounded above
- None of these

MTH631 Real Analysis II

Question No : 7 of 26 **Marks:** 1 (Bud

A function f is ———— on a subset S of R^n if S is contained in an open set on which $f_{x_1}, f_{x_2}, \ldots f_{x_n}$ are continuous

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Answer (Please select your correct option)

- continuously differentiable
- uniformly convergent
- piecewise convergent
- None of these

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Question No : 8 of 26 **Marks:** 1 (Budgeted

A critical point at which a function attains its minimum value among all points where it is defined is called _____

Answer (Please select your correct option)

- global maximum
- global minimum
- supremum
- None of these

MTH631 Real Analysis II

Question No : 9 of 26 Marks: 1 (Budgete

The rate of change of $f(x,y)$ in the direction of a unit vector is called the ———— of $f(x,y)$

Answer (Please select your correct option)

- differential
- directional derivative
- mixed derivative
- None of these

MTH631 Real Analysis II

Question No : 18 of 26

A function of the form $L(X) = m_1 x_1 + m_2 x_2 + \ldots + m_n x_n$ for some constants m_i's is called ———

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Answer (Please select your correct option)

- linear function
- quadratic function
- constant function
- None of these