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NPTEL

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Courses » Basic Calculus for Engineers, Scientists and Economists Announcements Course Ask a Question Progress



Unit 6 - Week - 05 - Infinite Series, Multiple Integrals

Course outline

How to access the portal

Week 01 - Numbers, Functions, Sequences and Limits of Functions

Week- 02-Continuity, Derivative, Maxima and Minima and Taylor's expansion

Week 03-Integration Of Real Functions

Unit 4 - Week - 04 - Function of Two Variables, Limits, Continuity, Differentiability, Unconstrained and Constrained minimization

Week - 05 - Infinite Series, Multiple Integrals

- Lecture 25 - Infinite Series - 1
- Lecture 26 - Infinite Series - 2
- Lecture 27 - Infinite Series - 3
- Lecture 28 - Multiple Integrals - 1
- Lecture 29 - Multiple Integrals - 2
- Lecture 30 - Multiple Integrals - 3
- Quiz : Assignment-5
- Assignment-5 Solution

Assignment-5

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2017-02-28, 23:59 IST

1 point

1) The series $\sum_{n=0}^{\infty} \left(\frac{1}{\sqrt{2}}\right)^n$ converges to

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

No, the answer is incorrect. Score: 0

Accepted Answers: $2 + \sqrt{2}$

2) The series $\sum_{n=0}^{\infty} \frac{n!}{1000^n}$ diverges.

- True
- False

No, the answer is incorrect. Score: 0

Accepted Answers: True

3) The series $\sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{\sqrt{n}}$ is

- converges to 0
- divergent
- absolutely convergent
- conditionally convergent

No, the answer is incorrect. Score: 0

Accepted Answers: conditionally convergent

4) The series $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n^2+2n+1}$

- converges to 5/36
- divergent

1 point

1 point

1 point

- absolutely convergent
- conditionally convergent

No, the answer is incorrect.

Score: 0

Accepted Answers:

absolutely convergent

5) Maclaurin series of the function $f(x) = x \cos \pi x$ is

- $x - \frac{\pi^2 x^3}{2!} + \frac{\pi^4 x^5}{4!} - \frac{\pi^6 x^7}{6!} + \dots$
- $x + \frac{\pi^2 x^3}{2!} + \frac{\pi^4 x^5}{4!} + \frac{\pi^6 x^7}{6!} + \dots$
- $\pi x - \frac{\pi^2 x^2}{2!} + \frac{\pi^4 x^4}{4!} - \frac{\pi^6 x^6}{6!} + \dots$
- $\pi x - \frac{\pi^3 x^3}{2!} + \frac{\pi^5 x^5}{4!} - \frac{\pi^7 x^7}{6!} + \dots$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$x - \frac{\pi^2 x^3}{2!} + \frac{\pi^4 x^5}{4!} - \frac{\pi^6 x^7}{6!} + \dots$

6) The value of the integration $\int_0^{\pi} \int_x^{\pi} \frac{\sin y}{y} dy dx$ is

- 1
- 2
- 2
- can not be determined

No, the answer is incorrect.

Score: 0

Accepted Answers:

2

7) Let $A = \int_0^1 \int_1^e dy dx$. Then after reversing the order of integration we get

- $A = \int_0^1 \int_1^e dx dy$
- $A = \int_0^1 \int_1^e dx dy$
- $A = \int_1^e \int_0^1 dx dy$
- $A = \int_1^e \int_0^1 dx dy$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$A = \int_1^e \int_0^1 dx dy$

8) If $F(x, y, z) = 2xy^3\hat{i} + 4x^2y^2\hat{j}$ then at $(x, y) = (1, 1)$, $\text{div}F =$

- 8
-



1 point

1 point

1 point

1 point

10



4



2

No, the answer is incorrect.**Score: 0****Accepted Answers:**

10

9) If $F(x, y, z) = (2x + y^2)\hat{i} + (2xy + 3y)\hat{k}$, then $\text{curl}F$ at $(0, 1)$ is given by

0

 $2\hat{i} + 3\hat{j}$  $4\hat{k}$  $2\hat{k}$ **No, the answer is incorrect.****Score: 0****Accepted Answers:**

0

10)

If C is the triangle bounded by $x = 0$, $x + y = 1$, $y = 0$ then $\oint_C (xy + y^2)dx + x^2dy =$ [Apply Green's Theorem] 1 point

1/2



11/6



-1/6



5/6

No, the answer is incorrect.**Score: 0****Accepted Answers:**

-1/6

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