**Quiz Chapter 8 (B1-SP2011)**

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Question 1

Marks: 1

Test the series for convergence or divergence.   
  
[\sum_{k=1}^\infty\cos k](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sum_%7bk=1%7d%5e\infty\cos+k)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Divergent |  |
|  | b. Convergent |  |

Question 2

Marks: 1

Find the exact value of the limit of the sequence defined by

[a_1=1, a_{n+1}=6-\frac{1}{a_n}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?a_1=1,+a_%7bn+1%7d=6-\frac%7b1%7d%7ba_n%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [\frac{6+4\sqrt{2}}{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\frac%7b6+4\sqrt%7b2%7d%7d%7b2%7d) |  |
|  | b. [4+2\sqrt{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?4+2\sqrt%7b2%7d) |  |
|  | c. [3-2\sqrt{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?3-2\sqrt%7b2%7d) |  |
|  | d. [4-2\sqrt{2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?4-2\sqrt%7b2%7d) |  |

Question 3

Marks: 1

Test the series for convergence or divergence.   
  
[\sum_{n=2}^\infty\frac{(-1)^{n-1}}{\sqrt[3]{7\ln n}}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sum_%7bn=2%7d%5e\infty\frac%7b(-1)%5e%7bn-1%7d%7d%7b\sqrt%5b3%5d%7b7\ln+n%7d%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. Divergence |  |
|  | b. Convergence |  |

Question 4

Marks: 1

Use Taylor's Inequality to estimate the accuracy |R2| of the approximation f(x) at the number *a* = 1, when .[0.71\leq x\leq 1.29](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?0.71\leq+x\leq+1.29)  
  
[f(x)=\frac{1}{x^2}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?f(x)=\frac%7b1%7d%7bx%5e2%7d)  
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. 1.7407 |  |
|  | b. 1.5407 |  |
|  | c. 1.0407 |  |
|  | d. 0.5407 |  |
|  | e. 1.8407 |  |

Question 5

Marks: 1

Find the interval of convergence of the series.   
  
[\sum_{n=1}^\infty\frac{6x^n}{\sqrt[5]{n}}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\sum_%7bn=1%7d%5e\infty\frac%7b6x%5en%7d%7b\sqrt%5b5%5d%7bn%7d%7d)

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. [-1,1] |  |
|  | b. [-1, 1) |  |
|  | c. (-1,1) |  |
|  | d. (-1,1] |  |

Question 6

Marks: 1

Use the binomial series to expand the function as a power series. Find the radius of convergence.  
  
[\frac{1}{(1+x)^4}](http://cms.fpt.edu.vn/elearning/filter/tex/displaytex.php?\frac%7b1%7d%7b(1+x)%5e4%7d)  
  
Select the correct answer.

Choose one answer.

|  |  |  |
| --- | --- | --- |
|  | a. | *x* | < 1 |  |
|  | b. | *x* | < 0.1 |  |
|  | c. | *x* | < 10 |  |
|  | d.   | *x* | < 8 |  |
|  | e. | *x* | < 1.8 |  |

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