國立嘉義大學101學年度基礎學科學力競賽試題卷

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| 科目：微積分 | 題型：選擇題 | 配分：100% |
| **1.** | Evaluate the limit, if it exists \_\_\_\_\_\_\_\_\_\_. |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) | Does not exist |  |  |  |  |
| **2.** | Find the values of *a* and *b* that make *f* continuous everywhere.  |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
| **3.** | Let  , Find ? |
|  | (A) | 0 | (B) | 1 | (C) |  |
|  | (D) | Does not exist |  |  |  |  |
| **4.** | For what values of  does the curve have maximum and minimum points?  Select the correct answer. |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **5.** | If .Select the correct answer. |
|  | (A) | 936 | (B) | 946 | (C) | 956 |
|  | (D) | None of these |  |  |  |  |
|  |  |  |  |  |  |  |
| **6.** | Find an equation of the tangent to the circle at the point P(3, 4). |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **7.** | Find the absolute maximum (M) and minimum (m)values of the function on the given interval. . Select the correct answer. |
|  | (A) | M>0, m>0. | (B) | M>0, m<0. | (C) | M<0, m<0 |
|  | (D) | M + m = 0 |  |  |  |  |
| **8.** | Find the inflection points for the function given.  Select the correct answer. |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
| **9.** | Find the area of the region enclosed by the line  and the curve .  |
|  | (A | 32.75 | (B) | 31.25 | (C) | 30.75 |
|  | (D | None of these. |  |  |  |  |
| **10**  | Find the volume of the solid of revolution formed by rotating the region  about the  , is the region under the curve  and above the X-axis from  to . |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  | 《背面尚有試題》 |
|  |  |
| **11.** | Let = K . Select the correct answer. |
|  | (A) | K=1 | (B) | 0 < K < 1 | (C) | 1 < K < 2 |
|  | (D) | 2 < K < 3 |  |  |  |  |
|  |  |  |  |  |  |  |
| **12.** | Evaluate the definite integral  using the fundamental theorem of calculus.  |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **13.** | ?  |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **14.** | ? |
|  | (A |  | (B) | 0 | (C) |  |
|  | (D | divergent |  |  |  |  |
|  |  |  |  |  |  |  |
| **15.** | ? |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **16.** | Evaluate the definite integral  using the fundamental theorem of calculus.  |
|  | (A) |  | (B) |  | (C) | 0 |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **17.** | For what values of p is the integral  convergent?  |
|  | (A) | P < 1 | (B) | P = 1 | (C) | P > 1 |
|  | (D) | P > 0 . |  |  |  |  |
|  |  |  |  |  |  |  |
| **18.** | Find = ? |
|  | (A) |  | (B) |   | (C) |  |
|  | (D) |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **19.** | = ? |
|  | (A) | 31(ln2) | (B) |  | (C) | 31+ln2 |
|  | (D) | 31 |  |  |  |  |
|  |  |  |  |  |  |  |
| **20.** | ? |
|  | (A) |  | (B) |  | (C) |  |
|  | (D) |  |  |  |  |  |

 《試題結束請將答案卡及試題卷一併繳回》