Started on	Wednesday, 27 January 2021, 3:05 PM
State	Finished
Completed on	Wednesday, 27 January 2021, 3:20 PM
Time taken	15 mins
Grade	**10.00** out of 10.00 (**100**%)

Question 1

Correct

Mark 2.00 out of 2.00

Find the value of $\int_0^\infty 2x^4 e^{1-x} dx.$

Select one or more:

- a. It diverges to ∞.
- b. $12e$
- c. 48
- d. $48e$

Your answer is correct.

The correct answers are: $12e$

, $48e$

, 48

Question 2

Correct

Mark 2.00 out of 2.00

Which among the following is a correct integral representation of Gamma function?

Select one:

a. $\Gamma(x) = \int_0^1 t^{x-1}e^{-t}dt$

b. $\Gamma(x) = \int_0^\infty t^{x-1}e^{-t}dt$

c. $\Gamma(x) = \int_0^1 t^x e^t dt$

d. $\Gamma(p) = \int_1^\infty x^{p-1}e^{-x}dx$

Your answer is correct.

The correct answer is: $\Gamma(x) = \int_0^\infty t^{x-1}e^{-t}dt$

Question 3

Correct

Mark 2.00 out of 2.00

Evaluate the value of $\int_0^\infty x^3 e^{-\frac{1}{2}x^2}dx$.

Select one:

a. not defined

b. 2

c. $\frac{1}{2}$

d. 4

Your answer is correct.

The correct answer is: 2

Question 4

Correct

Mark 2.00 out of 2.00

Which among the following is NOT correct?

Select one:

a. $\beta\left(\frac{2}{7},\frac{5}{7}\right)=\beta\left(\frac{3}{7},\frac{4}{7}\right)$ ✓

b. $\frac{\int_0^1 x^{p-1}(1-x)^{q-1}dx}{\int_0^1 t^{q-1}(1-t)^{p-1}dt}=1$

c. For nonnegative integer values, Gamma function is not defined.

d. $\Gamma\left(\frac{3}{4}\right)\Gamma\left(\frac{1}{4}\right)=\sqrt{2}\pi$

Your answer is correct.

The correct answer is: $\beta\left(\frac{2}{7},\frac{5}{7}\right)=\beta\left(\frac{3}{7},\frac{4}{7}\right)$

Question 5

Correct

Mark 2.00 out of 2.00

Find the value of $\int_0^{\frac{\pi}{4}} \sin^2 2x\ \cos^4 2x\ dx$.

Select one:

a. $\frac{\pi}{32}$

b. $\frac{\pi}{64}$ ✓

c. $\frac{\sqrt{\pi}}{32}$

d. $\frac{\sqrt{\pi}}{64}$

Your answer is correct.

The correct answer is: $\frac{\pi}{64}$