Vendor: PRMIA

Exam Code: 8002

Exam Name: Exam II: Mathematical Foundations of Risk
Measurement

Version: DEMO

QUESTION 1
What is the simplest form of this expression: log2(165/2)

A. 10
B. 32
C. 5/2 + log2(16)
D. log2 (5/2) + log2(16)

Answer: A

QUESTION 2
For each of the following functions, indicate whether its graph is concave or convex:

```
Y = 7x2 + 3x + 9
Y = 6 ln(3x)
Y = exp(-4x)
```

A. concave, concave, concave
B. concave, convex, convex
C. convex, concave, concave
D. convex, convex, concave

Answer: C

QUESTION 3
You invest $100 000 for 3 years at a continuously compounded rate of 3%. At the end of 3 years, you redeem the investment. Taxes of 22% are applied at the time of redemption. What is your approximate after-tax profit from the investment, rounded to $10?

A. $9420
B. $7350
C. $7230
D. $7100

Answer: B

QUESTION 4
You intend to invest $100 000 for five years. Four different interest payment options are available. Choose the interest option that yields the highest return over the five year period.

A. a lump-sum payment of $22 500 on maturity (in five years)
B. an annually compounded rate of 4.15%
C. a quarterly-compounded rate of 4.1%
D. a continuously-compounded rate of 4%

Answer: C

QUESTION 5
What is the 40th term in the following series: 4, 14, 30, 52, ...?

A. 240
B. 4598
C. 4840
D. 4960

Answer: C

QUESTION 6
Let a, b and c be real numbers. Which of the following statements is true?

A. The commutativity of multiplication is defined by
B. The existence of negatives is defined by
C. The distributivity of multiplication is defined by
D. The associativity of multiplication is defined by

Answer: C

QUESTION 7
Which of the following is not a sequence?

A. , , , ... , , ...
B. , , , , ...
C. , , , , , , ...
D. 30

Answer: D

QUESTION 8
Which of the following statements is not correct?

A. Every linear function is also a quadratic function.
B. A function is defined by its domain together with its action.
C. For finite and small domains, the action of a function may be specified by a list.
D. A function is a rule that assigns to every value x at least one value of y.

Answer: D

QUESTION 9
Which of the following statements is true?

A. Discrete and continuous compounding produce the same results if the discount rate is positive.
B. Continuous compounding is the better method because it results in higher present values compared to discrete compounding.
C. Continuous compounding can be thought as making the compounding period infinitesimally small.
D. The constant plays an important role in the mathematical description of continuous compounding.

Answer: C

QUESTION 10
Let X be a random variable normally distributed with zero mean and let . Then the correlation between X and Y is:

A. negative
B. zero
C. not defined
D. positive

Answer: B

QUESTION 11
A typical leptokurtotic distribution can be described as a distribution that is relative to a normal distribution

A. peaked and thin at the center and with heavy (fat) tails
B. peaked and thin at the center and with thin tails
C. flat and thick at the center and with heavy (fat) tails
D. flat and thick at the center and with thin tails

Answer: A

QUESTION 12
Kurtosis(X) is defined as the fourth centred moment of X, divided by the square of the variance of

A. Assuming X is a normally distributed variable, what is Kurtosis(X)?
B. 0
C. 3
D. 2
E. 1

Answer: B

QUESTION 13
Over four consecutive years fund X returns 1%, 5%, -3%, 8%. What is the average growth rate of fund X over this period?

A. 2.67%
B. 2.75%
C. 2.49%
D. None of the above

Answer: A

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