

CON3052S

PROPERTY ECONOMICS II

EXAMINATION PRACTICE QUESTIONS 2025

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THREE HOURS ARE ALLOWED FOR THIS PAPER.

A MAXIMUM OF 100 MARKS HAVE BEEN ALLOCATED.

ANSWER ALL QUESTIONS

THE USE OF A COMPUTER AND CALCULATOR IS PERMITTED.

PART A [10 MARKS]

ANSWER ALL QUESTIONS IN THIS SECTION

Question 1

A notable drawback of direct property is:

- A. No link to inflation
- B. Large lot sizes and illiquidity
- C. No need for management
- D. Zero fees and frictions

Question 2

In multiple regression, R^2 represents:

- A. The average residual size
- B. The standard deviation of Y
- C. The proportion of variation in Y “explained” by the X-variables
- D. The number of predictors used

Question 3

An index focused on one industry (e.g., REITs) is best described as a:

- A. Broad market index
- B. Momentum index
- C. Sector/industry index
- D. Currency index

Question 4

Unlisted property funds provide:

- A. Pooled access to property managed by a professional manager
- B. Continuous exchange trading

- C. Instant liquidity at all times
- D. Exposure only via derivatives

Question 5

A price-weighted index gives greatest influence to constituents with:

- A. Highest market value
- B. Highest dividend yield
- C. Highest price per share
- D. Lowest volatility

Question 6

Which of the following is most clearly systematic?

- A. A tenant default in one building
- B. A labour strike at a single REIT
- C. A surprise central-bank rate hike
- D. A roof repair expense

Question 7

Under a normal distribution, return probabilities can be characterised by:

- A. Median only
- B. Mean and standard deviation
- C. Skewness only
- D. Maximum and minimum

Question 8

Investors who defer consumption expect compensation for:

- A. Manager alpha only
- B. Fees and taxes only
- C. Time value, inflation, and risk
- D. Index membership

Question 9

REOCs (listed property companies) typically:

- A. Are tax-exempt entities by rule
- B. Are taxable corporates with discretion over dividend payouts
- C. Must distribute $\geq 90\%$ of income
- D. Cannot invest outside their home country

Question 10

Multicollinearity refers to:

- A. Non-normal residuals
- B. High correlation among predictors
- C. Omitted-variable bias
- D. Serial correlation in residuals

PART B [20 MARKS]

ANSWER ALL QUESTIONS IN THIS SECTION

Question 11

The monthly returns of Pyrgos Property Fund are modelled as normally distributed with mean 0.55% and standard deviation 1.17%. What is the probability that Pyrgos' return in any given month exceeds 1.00%?

- A. 33.57%
- B. 35.03%
- C. 38.36%
- D. 64.97%

Question 12

Three stocks close at R40, R80, and R100. The index is computed as the average price (divisor = 3). Overnight, the R100 stock does a 2-for-1 split to R50. To keep the opening index level unchanged, the new divisor should be:

- A. 2.000
- B. 2.318
- C. 2.667
- D. 3.000

Use the information below to answer the next two questions:

Based on 20 years of monthly return data ($n=240$), you have computed the sample skewness and sample kurtosis of Kozani REIT as follows:

Sample Skewness: -0.45

Sample kurtosis: 3.80

Question 13

Compute the Jarque-Bera test statistic using the information provided.

- A. -14.50
- B. 14.50
- C. 5.991
- D. -5.991

Question 14

Based on the Jarque-Bera test statistic, what would be your conclusion?

- A. The returns of Kozani are normally distributed
- B. The returns of Kozani are not normally distributed
- C. Cannot conclude based on the data provided

Question 15

The portfolio of an unlisted property fund grows from R200,000,000 to R260,000,000 in 4 years. What is the compound annual growth rate (CAGR)?

- A. 6.78%
- B. 7%
- C. 8%
- D. 5.5%

Question 16

The following information relates to Kastoria Industrial REIT:

$P_0=50$, dividend=1 at year-end, $P_1=51$.

Calculate the annual total return for Kastoria REIT.

- A. 4.00%
- B. 1.04%
- C. 5.00%
- D. 5.20%

Question 17

The annual total returns for Sorrento Office Index are +8%, -2%, +6%. If the starting index value, $TRI_0=100$, what is the ending total return index (TRI_3)?

- A. 106.00
- B. 108.19
- C. 105.84
- D. 112.19

Question 18

The monthly returns of Agia REIT over the past year was 0.8% with a standard deviation of 2.4%. Assuming normal distribution, what is the probability that the next monthly return is at least 0% (i.e., non-negative)?

- A. 33.33%
- B. 36.94%

- C. 63.06%
- D. 0.3333%

Question 19

The annual returns for Pisa REIT over the past three years are: +10%, −5%, +8%. The arithmetic mean and geometric mean are approximately:

- A. 4.33%, 4.33%
- B. 4.33%, 4.12%
- C. 4.11%, 4.33%
- D. 5.33%, 4.11%

Question 20

A price index level sequence for the Tropea Industrial Property Index is $250 \rightarrow 275 \rightarrow 268$. Rebase to start at 100. What are the next two rebased levels?

- A. 108.0, 100.0
- B. 112.7, 168.0
- C. 110.0, 107.2
- D. 90.9, 98.0

PART C [50 MARKS]
ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION 21

(20 MARKS)

Jasper Property Analytics is planning to create an exchange-traded fund which would track the performance of South African REITs which specialise in industrial REITs. The two REITs which are currently classified as industrial REITs are Delta Property Fund and Equites Property Fund Limited.

The data for the creation of the index that this fund would track is linked below:

DATA – 2025 CON3052S EXAM PRACTICE

- a) Explain the difference between a price index and a market-value (capitalisation) weighted index. **(4 Marks)**
- b) Construct a price-weighted index using the data provided. The base index value should be set to 100. **(4 Marks)**
- c) Construct a value-weighted index using the data provided. Again, set the index value to 100. **(4 Marks)**
- d) Calculate the price returns based on the indexes constructed (b) and (c). **(4 Marks)**
- e) Produce a graph showing the two price indexes and another showing the two price returns. **(4 Marks)**

QUESTION 22**(30 MARKS)**

Below is a link to the South African Listed Property (SAPY) Total Return Index data from January 2017 to December 2020. Use this data to answer the questions that follow:

DATA – 2025 CON3052S EXAM PRACTICE

a) Calculate the total returns for SAPY over the period. **(3 Marks)**

b) Calculate the skewness and kurtosis of the SAPY total returns. Use MS Excel to do this calculation. Ensure that you show all workings. Use the following formula:

$$\text{Population Skewness} = \frac{1}{N} \sum_{i=1}^n \left(\frac{r_i - \bar{r}}{\sigma} \right)^3 \quad \text{Population Kurtosis} = \frac{1}{N} \sum_{i=1}^n \left(\frac{r_i - \bar{r}}{\sigma} \right)^4$$

(15 Marks)

c) Based on the result of the skewness and kurtosis, would you say that the returns are normally distributed? **(2 Marks)**

d) Using the EViews software, estimate the Jarque Bera statistic and p-values. Based on the result, would you say that the data is normally distributed? **(10 Marks)**

PART D [20 MARKS]
ANSWER ONLY TWO QUESTIONS IN THIS SECTION

QUESTION 23

(10 MARKS)

Discuss the key drivers of property prices – both residential and commercial. Base your discussion on at least two of the regions covered by the various project groups, i.e. *Middle East and Africa, Europe, Americas and Asia-Pacific*. See the link below for the completed Group Projects:

[2025 CON3052S Completed Group Projects](#)

QUESTION 24

(10 MARKS)

a) Why would an investor choose to invest in listed property, rather than directly buying properties? **(5)**

b) What are the four main investment property sectors? List and briefly explain them. **(5)**

QUESTION 25

(10 MARKS)

a) Discuss some drawbacks of direct property investments. **(5)**

b) Why would an investor choose unlisted property funds over listed property investments? **(5)**

QUESTION 26

(10 MARKS)

a) What are the two main components of property investment return? **(5)**

b) Why might two portfolios with the same arithmetic mean have very different portfolio values over time? **(5)**

QUESTION 27

(10 MARKS)

a) What is a market index? Explain five (5) uses of property market indexes. **(5)**

b) What are the key design choices when designing a property market benchmark index? **(5)**

QUESTION 28

(10 MARKS)

a) Distinguish between a price index and a total return index. Which is more appropriate for listed property portfolios? Explain. **(5)**

b) What is the purpose of rebasing indexes to have the same starting value, say 1,000? (5)

QUESTION 29

(10 MARKS)

a) Define skewness and kurtosis of investment returns and briefly explain why they matter in property risk analysis. (5)

b) Suggest three ways of working with data that has been found not to be normally distributed. (5)

QUESTION 30

(10 MARKS)

a) Explain the purpose of the Jarque-Bera Test. (5)

b) Describe how the Jarque-Bera test is implemented and interpreted. (5)

QUESTION 31

(10 MARKS)

a) Define covariance and correlation. Explain why correlation is preferred when comparing the relationship between two property-market variables. (5)

b) Define simple linear regression and explain how it is used in property research for estimation and forecasting. (5)

QUESTION 32

(10 MARKS)

a) Define multiple regression and explain how it is used in property research for estimation and forecasting. (5)

b) State the key multiple-regression assumptions and give a property market example of a violation of any two of them. (5)