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Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
(TAKE HOME)  
SEMESTER II  
SESSION 2019/2020**

COURSE NAME : QUANTITATIVE TECHNIQUE FOR  
REAL ESTATE

COURSE CODE : BPE 44303

PROGRAMME CODE : BPD

EXAMINATION DATE : JULY 2020

DURATION : 24 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS  
**OPEN BOOK EXAMINATION**

THIS QUESTION PAPER CONSISTS OF **THREE (3) PAGES**

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**TERBUKA**

- Q1** A Property Consultant investigates the most significant variables that influence the apartment/ condominium price for two areas in Johor Bahru, Malaysia. The variables which have been chosen for this study are sizes, number of rooms, building condition, building completion, facilities rating and distance to schools, hospitals, and city centre.

**Appendix I: Data for two areas in Johor Bahru (Microsoft Excel)**

Interpret the data based on the requirements of questions (a) to (g). Use the IBM SPSS Statistics software to develop the correlation matrix and the regression equation.

- (a) Determine the null and alternate hypotheses in this study.
- (b) Determine independent variable that has the strongest correlation with the dependent variable.
- (c) Determine the existence of multicollinearity.
- (d) Determine the coefficient of correlation.
- (e) Determine the regression equation
- (f) Conduct a global test of hypothesis to determine whether any of the net regression coefficients differ from zero. Let  $\alpha = .05$ .
- (g) Conduct a test of hypothesis for the individual regression coefficients. Would you consider deleting any of the independent variables? Let  $\alpha = .05$ .

(35 marks)

- Q2** A researcher aims to measure the relationship between macroeconomic variables and the housing price. The research examines empirically whether the increasing trend in the Malaysian housing price is related to changes in the gross domestic product (GDP), population, inflation rate, costs of construction, interest rate, and real property gains tax (RPGT). The empirical data were collected from the Valuation and Property Services Department of the Ministry of Finance Malaysia from 2001 to 2018.

**Table 2(a): Coefficient**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std Error	Beta			Tolerance	VIF
(Constant)	-24.191	3.757		-6.438	.000		
ln(GDP)	.172	.040	.446	4.274	.000	.107	2.358
ln(Cost of Construction)	-.004	.005	-.019	-0.675	.505	.134	5.459
ln(Population)	1.937	.236	.752	7.569	.000	.151	3.610
Inflation Rate	-.004	.003	-.046	-1.593	.121	.092	4.868
Interest Rate	.002	.003	.020	0.653	.518	.087	8.780
RPGT(%)	.002	.000	.219	3.895	.000	.167	6.125

**Dependent variable: Housing price**

R<sup>2</sup> = 0.981; F statistic = 287.093

Hypothesis developed:

- H1:** The population in Malaysia has a significant impact on the housing price.
- H2:** The gross domestic product (GDP) has a significant impact on the housing price in Malaysia.
- H3:** The interest rate has a significant impact on the housing price in Malaysia.
- H4:** The labour force has a significant impact on the housing price in Malaysia.
- H5:** Inflation has a significant impact on the housing price in Malaysia.
- H6:** The RPGT has a significant impact on the housing price in Malaysia.

**Table 2(b): Literature review**

No.	Author (Year)	Discussion
1	Qing (2015)	Housing investment is part of GDP
2	Chioma (2017)	There is a causal relationship between the gross domestic product, which can be measured as economic growth, and the consumption expenditure, which grows as a result of the increase in consumption expenditure
3	Agus (2018)	When the demand is greater than the supply, it will cause the housing price to increase
4	(Monk, 2019; Asiah, 2019)	The constructors might face restrictions on the supply of land in the area, finding a strategic location to build the houses and the type, density and timing of the development

- (i) Discuss the useful findings from **Table 2(a)** for speculators, investors, and buyers to know which factors to account for in housing investment decision making with the help of the literature review in **Table 2(b)**.

(15 Marks)

- END OF QUESTIONS -

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