

# MARKING SCHEME

## ATW 202 BUSINESS RESEARCH METHODS

### Part 1 Objective Answers

1	D
2	B
3	B
4	B
5	B
6	D
7	C
8	C
9	D
10	B
11	D
12	B
13	B
14	A
15	A
16	C
17	B
18	D
19	C
20	B

21	A
22	B
23	B
24	B
25	B
26	A
27	B
28	A
29	A
30	B
31	A
32	B
33	A
34	B
35	A
36	B
37	A
38	A
39	B
40	A

## Question 2

- a. **Causal study** the researcher wants to model the impact of interest rate on the amount of savings in each bank.
- b. **Experiment**, the researcher will control the interest rate applied in each bank.
- c. **Field Experiment** as it is done in the normal setting of the bank with manipulation of interest rates.
- d. **Longitudinal** as data will be collected at least 2 points in time, before and after.
- e. **Branch**, the 4 bank branches.

2 Marks for each section  
1 Mark for the **bold** answer  
1 Mark for the **explanation**

## Question3

*Based on the explanation given above, answer the following questions.*

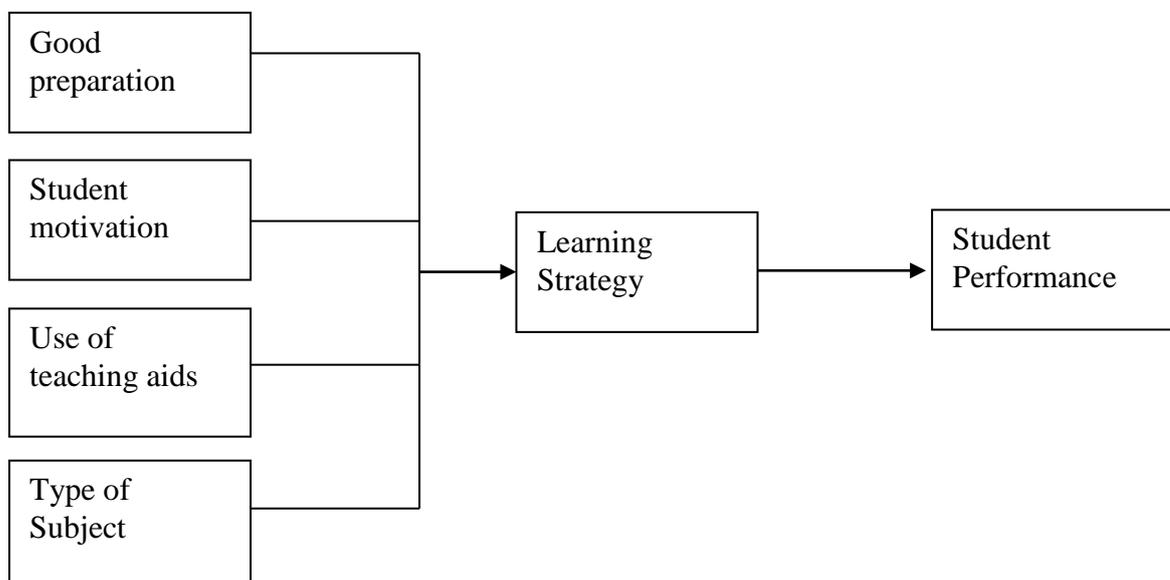
- (a) What is the research problem?

**What are the factors influencing student performance?**

[ 2 markah ]

- (a) Bentuk satu kerangka teori yang bersesuaian.

[ 4 markah ]



(c) Develop 4 hypotheses to be tested.

[ 4 marks ]

**H<sub>1</sub> Good preparation has a positive effect on learning strategy.**

**H<sub>2</sub> Student motivation has a positive effect on learning strategy.**

**H<sub>3</sub> Use of teaching aids has a positive effect on learning strategy.**

**H<sub>4</sub> Type of subject has a positive effect on learning strategy.**

**H<sub>5</sub> Learning strategy will influence positively student performance**

#### **Question 4**

#### **Please use your judgement**

*By giving suitable examples, explain each of the following:*

(a) *What are the hallmarks of a good scientific research?*

[ 4 marks ]

1. **purposive**
2. **rigour**
3. **testability**
4. **replicability**
5. **accuracy**
6. **objectivity**
7. **generalizability**
8. **parsimony**

(b) *What is a research problem? Describe the different situations where they are relevant.*

[ 4 marks ]

**Research problem is a situation where there is a gap between the current situation and the ideal situation.**

- **Existing problem that requires solution**
  - **Complaint of harrassment by senior officers**
- **Specific areas in the organization requiring improvement**
  - **When policy about “harrassment” exist but genuine complaint still occur**
- **Theoretical or conceptual issue that needs tightening up**
  - **What is meant by “harrassment”?**
- **Research questions that basic researcher needs to answer empirically**
  - **Impact of “harrassment” on performance**

(c) *Differentiate deductive from inductive thinking using suitable examples.*

[ 4 marks ]

**Proposition is more at an abstract level and when it is stated in an empirically testable form it becomes a hypothesis**

**Reinforcement will lead better habits. (Proposition)**

**If workers are rewarded for exceeding sales target then this will lead to better sales productivity. (Hypothesis)**

(d) What are the characteristics of data?

[ 4 marks ]

- **Abstractness**
- **Verifiability**
- **Elusiveness**
- **Closeness**

(e) What evidence can be used to evaluate causality?

[ 4 marks ]

**Sequence**  
**Covariation**  
**No other causes**  
**Theory**

### **Question 5**

Based on the output given, answer the following questions.

*Based on the output given, answer the following questions.*

(a) Can we develop a regression equation based on the results of the analysis?

[ 2 marks ]

**Yes, the F = 71.133 and Signif of F = 0.000 < 0.01 so we can conclude that all the 3 variables together can significantly explain the variation in DEMAND.**

(b) Determine the best fitting regression equation.

[ 2 marks ]

**DEMAND = 79.106 - 4.928 (PRICE) + 0.016 (INCOME) + 0.175 (SUBPRICE)**

(c) What is the total Demand if Price was RM 9, Income was RM 1250 and the SubPrice was RM 15?

[ 3 marks ]

**DEMAND = 79.106 - 4.928 (9) + 0.016 (1.25) + 0.175 (15) = 37,399 boxes**

(d) Develop and test these 3 hypotheses at the 1% level:

- *There is a negative relationship between Price and Demand*
- *When Income increases the Demand will also increase*
- *When SubPrice is high, Demand for Butter will increase*

[ 6 marks ]

<b>Variable</b>	<b>t-value</b>	<b>p value</b>	<b>Decision</b>
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$$H_0 \quad b_1 = 0$$

$$H_1 \quad b_1 < 0$$

PRICE	-3.059	0.005	$p < 0.05$	Reject $H_0$
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$$H_0 \quad b_2 = 0$$

$$H_1 \quad b_2 > 0$$

INCOME	2.666	0.017	$p < 0.05$	Reject $H_0$
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$$H_0 \quad b_3 = 0$$

$$H_1 \quad b_3 > 0$$

SUBPRICE	-6.665	0.022	$p < 0.05$	Reject $H_0$
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(e) *Interpret the coefficient of determination.*

[ 2 marks ]

$R^2 = 0.951$ . We can conclude that 95.1% variation in DEMAND can be explained by all the 3 variables; about 4.9% variation cannot be explained.

(f) *Has all the assumptions of the analysis been met? If not explain how they can be assessed.*

[ 2 marks ]

- There is no multicollinearity as  $VIF < 10$  and  $Tolerance > 0.1$  also Conditional index is more than 30 but no 2 variance proportions are more than 0.9
- The histogram indicates normal distribution with mean = 0 and SD = 1
- P-P plot shows the errors are normally distributed
- Partial plots indicates the variables are linearly related to Y
- There are no outliers
- Constant variance can also be ascertained as the plot of studentized residual and predicted Y is given
- No autocorrelation as the DW value is 1.818. It is in the region of 1.5 to 2.5.

(g) *Write a short report on how KEJU MENTEGA MALAYSIA can interpret the results.*

[ 3 marks ]

Based on the results all 3 variables are significant, PRICE, INCOME and SUBPRICE. Based on the Standardized Beta values, PRICE has the most influence ( $\beta = -0.563$ ) followed by INCOME ( $\beta = 0.392$ ) and SUBPRICE ( $\beta = 0.143$ ) indicating that PRICE and INCOME are the most crucial factors in predicting revenue. To increase DEMAND, KEJU MENTEGA MALAYSIA needs to reduce the PRICE of their product and target families with higher INCOME.