MARKING SCHEME

ATW 202 BUSINESS RESEARCH METHODS

Part 1 Objective Answers

1	**A**	21	**A**
2	**D**	22	**B**
3	**A**	23	**A**
4	**B**	24	**B**
5	**D**	25	**A**
6	**C**	26	**A**
7	**E**	27	**A**
8	**A**	28	**B**
9	**C**	29	**B**
10	**A**	30	**A**
11	**E**	31	**B**
12	**E**	32	**B**
13	**C**	33	**B**
14	**E**	34	**B**
15	**E**	35	**A**
16	**C**	36	**A**
17	**B**	37	**B**
18	**A**	38	**A**
19	**A**	39	**A**
20	**A**	40	**B**

Bahagian B: Soalan Senario.
Section B: Scenario questions.

<u>Soalan 2</u>/*Question 2* (10 markah/*marks*)

*Based on the scenario given, please state how the researcher can devise a research design by looking at each of the criteria listed below. (**Please give reason why**).*

A specific department (A) within an organization has a high turnover rate; employees of this department have a shorter average tenure than those of other departments in the company. Skilled workers are leaving and the worker population contains a high percentage of novice workers. The management would like to find out why this is happening to this department (A) and not to other departments in the company. The management decides to take the whole company employees to resort hotel to find out why this is happening and how to remedy them. They participated in many different activities in the resort hotel.

(a)   *Purpose of Research.*

Descriptive as the company wants to know the reason for turnover.

(b)   *Extent of researcher interference.*

Ex post facto, researcher has no interference or manipulation

(c)   *Research Environment.*

Field Study as it does not involve any manipulation.

(d)   *Time Dimension.*

Cross-sectional as data will only be collected once.

(e)   *Unit of analysis.*

Department as only department A has this issue.
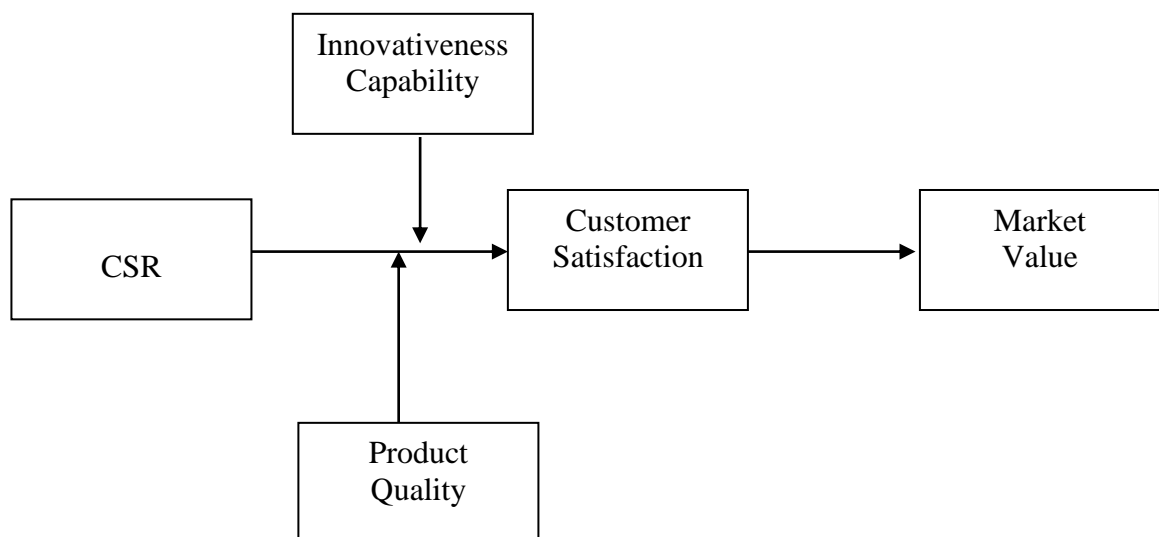
Soalan 3/*Question 3* (10 markah/*marks*)

A recent study looked at the impact of corporate social responsibility (CSR) and the market value of the firm. The study posited that when CSR increase so will the market value of the firm. Further to that some researchers also have pointed out that the relationship works through a variable called customer satisfaction. From past experience the manager also knows that the company has to match CSR practices with their innovativeness capability and product quality if they want to keep their customers satisfied. Taking these inputs, you are requested by management to develop a research framework for a short study.

Based on the description given above, answer the following questions.

(a)   *What is the research problem?*

        What factors influences market value of the firm?

(b)   *Develop a suitable research framework.*

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                    ┌──────────────────┐
                    │  Innovativeness  │
                    │    Capability    │
                    └────────┬─────────┘
                             │
                             ▼
┌──────────┐         ┌──────────────┐         ┌──────────┐
│          │         │   Customer   │         │  Market  │
│   CSR    │────────▶│ Satisfaction │────────▶│  Value   │
│          │         │              │         │          │
└──────────┘         └──────────────┘         └──────────┘
                             ▲
                             │
                    ┌────────┴─────────┐
                    │     Product      │
                    │     Quality      │
                    └──────────────────┘
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(c)   *Develop 4 hypotheses to be tested.*

        H1:   CSR has a positive effect on Customer Satisfaction
        H2:   Customer Satisfaction has a positive effect on Market Value
        H3:   The positive relationship between CSR and Customer satisfaction will be stronger when product quality is higher
        H4:   The positive relationship between CSR and Customer satisfaction will be stronger when innovativeness capability is higher
        H5:   The relationship between CSR and Market Value will be mediated by Customer Satisfaction

Soalan 4/*Question 4* (20 markah/*marks*)

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

(a) *Explain what replicability is. Why is replicability important in research?*

Results of the test of research objectives should be supported again and again when the same type of research is being repeated in other similar circumstances.
The findings and conclusion if similar findings emerge on the basis of data collected by other organizations employing the same methods.

(b) *Differentiate induction from deduction by giving examples.*

Deduction is a form of reasoning in which the conclusion must necessarily follow from the premises given. The next slide provides an example of a deductive argument.
Induction is a form of reasoning that draws a conclusion from one or more particular facts or pieces of evidence.

(c) *What is theory and why is it important?*

Theory is a set of concepts, definition and propositions that are inter related systematically which is forwarded to explain or predict a phenomenon

1. **Reduces the range of facts that needs to be researched**
2. **Summarizes what is already known about the object of the research**
3. **Is used to predict other facts that needs to be found**

(d) *Explain what is content validity and how you assess content validity.*

Content validity refers to the extent to which measurement scales provide adequate coverage of the investigative questions.
- *To determine content validity, one may use literature review and the judgment of a panel of experts.*

(e) *How do you assess validity of a sample that you draw?*

Validity of a sample depends on two considerations: accuracy and precision.

Accuracy is the degree to which bias is absent from the sample. Increasing the sample size can reduce systematic variance as a cause of error. Systematic variance is a variation that causes measurements to skew in one direction or another.

Precision of estimate is the second criterion of a good sample design. Precision is measured by the standard error of estimate, a type of standard deviation measurement. The smaller the standard error of the estimate, the higher is the precision of the sample.

Soalan 5/*Question 5* (20 markah/*marks*)
Based on the output given, answer the following questions.

(a)   *Determine the best fitting regression equation.*

SCORE = 231.894 + 0.293 (INCOME) – 0.878 (SINGLE) – 0.496 (RATIO) - - 0.023 (SALARY)

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

Yes, the F = 88.367 and Signif of F = 0.000 < 0.01 so we can conclude that all the 4 independent variables together can significantly explain the variation in SCORE.

(c)   *Develop and test these 4 hypotheses at the 5% level:*

- *When **INCOME** is high then **SCORE** will be high*
- *When **RATIO** increases the **SCORE** will decrease*
- *There is a positive relationship between **SALARY** and **SCORE***
- *There is a negative relationship between **SINGLE** and **SCORE***

Variable	Beta	t-value	p value		Decision
H_0 $b_1 = 0$					
H_1 $b_1 > 0$					
INCOME	0.533	8.509	0.000	$p < 0.05$	Reject H_0
H_0 $b_2 = 0$					
H_1 $b_2 < 0$					
SINGLE	-0.278	-5.056	0.000	$p < 0.05$	Reject H_0
H_0 $b_3 = 0$					
H_1 $b_3 < 0$					
RATIO	-0.168	-3.974	0.000	$p < 0.05$	Reject H_0
H_0 $b_4 = 0$					
H_1 $b_4 > 0$					
SALARY	-0.016	-0.313	0.755	$p > 0.05$	Accept H_0

(d) *Calculate **SCORE** if given the values below:*

- ▪ ***INCOME*** *= 46,890*
- ▪ ***RATIO*** *= 17.2%*
- ▪ ***SALARY*** *= 43,500*
- ▪ ***SINGLE*** *= 0.425*

SCORE = 231.894 + 0.293 (46.980) – 0.878 (42.5) – 0.496 (17.2) - -0.023 (43.50)
Score = 232.67

(e) *Interpret the coefficient of determination.*

$R^2 = 0.617$**. We can conclude that 61.7% variation in SCORE can be explained by all the 4 independent variables; about 38.3% variation cannot be explained.**

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

Can be assessed

- **There is no multicollinearity as VIF< 10 and Tolerance > 0.1 also Conditional index is LESS than 30**
- **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 2 outliers, case 137 and 178**

Cannot assessed

- **Constant variance cannot be ascertained as the plot of studentized residual and SCORE is NOT given**

- **Autocorrelation cannot be tested as the DW statistics were not presented.**

(g) *Write a short report on how the education department can use the results.*

Based on the results 3 variables are significant. Based on the Standardized Beta values, INCOME has the most influence ($\beta = 0.533$) followed by SINGLE ($\beta = -0.278$) and RATIO ($\beta = -0.168$) indicating that and INCOME has a positive effect while SINGLE had a negative effect on SCORE. RATIO also had a negative effect on SCORE. To improve SCORE, the education department should focus on reducing the student-teacher ratio and to focus on students from single families.

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