



**KOLEJ UNIVERSITI TEKNOLOGI TUN
HUSSEIN ONN**

**PEPERIKSAAN AKHIR
SEMESTER I
SESI 2006/2007**

NAMA MATA PELAJARAN : METODOLOGI PENYELIDIKAN PROJEK
KOD MATA PELAJARAN : BIT 3343
KURSUS : 3 BIT
TARIKH PEPERIKSAAN : NOVEMBER 2006
JANGKA MASA : 2 JAM 30 MINIT
ARAHAN : JAWAB **SEMUA** SOALAN

KERTAS SOALAN INI MENGANDUNGI LAPAN (8) MUKA SURAT

SECTION A

Instruction: **CIRCLE** the correct answer.

- Q1** Which of the following would be an example of *applied research*?
- A. research to satisfy intellectual curiosity
 - B. research on a problem in need of improvement
 - C. research on whom citizens decide to vote for
 - D. research for theoretical purposes
- Q2** Which type of interview would least restrict the topics of conversation?
- A. unstructured
 - B. structured
 - C. semistructured
 - D. anti-structured
- Q3** What type of validity is associated with judgment by experts that the indicator really measures what it supposed to measure?
- A. face validity
 - B. test-retest validity
 - C. criterion validity
 - D. convergent validity
- Q4** The scientific process:
- A. always begins with theory and ends with research
 - B. involves a continuous interaction of theory and research
 - C. always starts with research, out of which theories are built
 - D. is an orderly procedure for making systematic observations
- Q5** Parameter is for _____ as statistic is for _____.
- A. measurement; sampling
 - B. population; sample
 - C. mean; standard error
 - D. standard error; mean

- Q6** What does a *null* hypothesis usually do?
- A. make an uneducated guess about the nature or direction of a relationship
 - B. state that there is an indirect relationship between the variables
 - C. suggest an inverse relationship between the variables
 - D. posit the absence of a relationship between the variables

- Q7** Which level of measurement has an absolute or "true" zero point?
- A. nominal
 - B. ordinal
 - C. interval
 - D. ratio

- Q8** Reliability is mostly a matter of _____, while validity is mostly about _____.
- A. consistency; accuracy
 - B. accuracy; consistency
 - C. similarity; dissimilarity
 - D. similarity; consistency

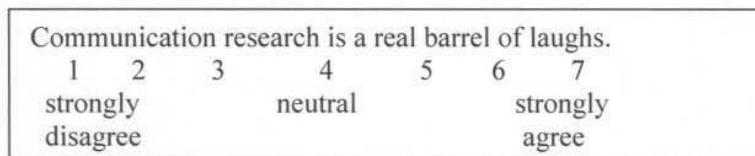


Figure Q9 Question

- Q9** What type of question is in Figure 9?
- A. 5-point Likert-type scale
 - B. a 7-point Likert-type scale
 - C. a semantic differential scale
 - D. an open-ended question
- Q10** What level of measurement is used for measuring employee skills?
- A. nominal
 - B. ordinal
 - C. interval
 - D. ratio

(20 marks)

SECTION B

Instruction: Answer **ALL** questions.

- Q11** List and give examples **THREE (3)** factors that can distract the audience from what you are saying during delivery. (6 marks)
- Q12** List which development approach should be used according to the rules-of-thumb by Huges and Cotterell (2002). (6 marks)
- Q13** How have technological advancements helped in writing and presenting research report? (5 marks)
- Q14** What are the chapters in a typical students' project report involved the development of a software system? (Briefly describe each identified chapter). (12 marks)
- Q15** How would you describe the research process? (12 marks)
- Q16** Table 1 and 2, summarized the results of data analyses of research conducted in a university. The number of student sampled for the study was 25.

You are required to:

- a. Interpret the information contained in each table.

Table 1: Minimum, Maximum, Means and Standard Deviation

	Minimum	Maximum	Mean	Std. Deviation
IQ Score	112.00	124.00	118.2400	3.24397
TEE	270.00	410.00	354.1200	38.06499
UAScore	58.00	86.00	73.3600	7.74532
Sample size	25	25	25	

Note: TEE – Tertiary Entrance Examination, UAScore – University Average Score

(5 marks)

Table 2: Correlations Among the Variables

		IQ Score	TEE	UA Score
IQ Score	Pearson Correlation Sig. (2-tailed)	1		
TEE	Pearson Correlation Sig. (2-tailed)	.767(**)	1	
UA Score	Pearson Correlation Sig. (2-tailed)	.598(**)	.637(**)	1

** Correlation is significant at the 0.01 level (2-tailed).

Note: TEE – Tertiary Entrance Examination, UAScore – University Average Score

(9 marks)

- Q17** Given the following simple software specification, identify possible omissions in the specification, if any.

The system must convert Celsius into Fahrenheit temperatures. The user should enter a numeric value (representing the temperature in °C) and the system should respond with the equivalent temperature in Fahrenheit.

(10 marks)

- Q18** Evaluate the following abstract. Discuss in terms of good or bad, suggesting how the abstract could have been improved.

This article investigates the application of ANNs to software development cost estimation. It begins by discussing software predictions techniques such as COCOMO (Boehm, 1982) and Delphi (Helmer-Heidelberg, 1966). The article identifies the process of software cost estimation and uses this as a basis on which to apply the ANNs developed for this project. Equations are presented showing how improvements can be made to the backpropagation algorithm used in ANN training. ANN simulation is also discussed. An evaluation of the results from the ANNs is presented and these results compare favorably with existing techniques identified in the paper.

(15 marks)

BAHAGIAN A

Arahan: Sila BULATKAN jawapan anda.

- S1 Antara yang berikut, mana satu merupakan contoh penyelidikan *applied*?
- A. penyelidikan yang memenuhi ingin tahu intelektual
 - B. penyelidikan terhadap masalah yang perlu penambahbaikan
 - C. penyelidikan keatas warganegara untuk menentukan undian
 - D. penyelidikan untuk tujuan teoretikal
- S2 Jenis temuduga yang mana kurang menghadkan kepada topik perbincangan?
- A. *unstructured*
 - B. *Structured*
 - C. *semistructured*
 - D. *anti-structured*
- S3 Apakah jenis kesahan yang berkaitan dengan pengadilan pakar yang menunjukkan ukuran itu mengukur apa yang hendak diukur?
- A. *statistical correspondence validity*
 - B. *test-retest validity*
 - C. *criterion validity*
 - D. *convergent validity*
- S4 Proses saintifik:
- A. bermula dengan teori dan berakhir dengan penyelidikan
 - B. melibatkan interaksi berterusan antara teori dan penyelidikan
 - C. selalunya bermula dengan penyelidikan,
 - D. hasilnya teori yang dibangunkan adalah mengikut urutan prosedur yang pemerhatian yang sistematik
- S5 Parameter adalah _____ sama dengan statistik bagi _____.
- A. ukuran; pensampelan
 - B. populasi; sampel
 - C. min; ralat piawai
 - D. ralat piawai; min

S6 Apakah yang biasa dilaksanakan oleh hipotesis nol?

- A. make an uneducated guess about the nature or direction of a relationship
- B. state that there is an indirect relationship between the variables
- C. suggest an inverse relationship between the variables
- D. posit the absence of a relationship between the variables

S7 Aras ukuran yang mana satu merupakan nilai sempurna atau "true" zero point?

- A. nominal
- B. ordinal
- C. selang
- D. ratio

S8 Kebolehpercayaan adalah berkenaan _____, manakala kesahan adalah tentang _____.

- A. *consistency; accuracy*
- B. *accuracy; consistency*
- C. *similarity; dissimilarity*
- D. *similarity; consistency*

Communication research is a real barrel of laughs.						
1	2	3	4	5	6	7
strongly			neutral			strongly
disagree						agree

Rajah 9 - Soalan

S9 Apakah jenis soalan di **Rajah 9** di atas?

- A. *a 5-point Likert-type scale*
- B. *a 7-point Likert-type scale*
- C. *a semantic differential scale*
- D. *an open-ended question*

S10 Apakah aras ukuran bagi mengukur kemahiran pekerja?

- A. nominal
- B. ordinal
- C. interval
- D. ratio

(20 markah)

BAHAGIAN B

Arahan: Jawab SEMUA soalan.

- S11** Senarai dan berikan TIGA (3) factor yang akan mengganggu hadirin daripada apa yang anda cakap semasa pembentangan. (6 markah)
- S12** Senaraikan kaedah pembangunan yang mana patut saya gunakan mengikut “rules-of-thumb” oleh Huges and Cotterell (2002). (6 markah)
- S13** Bagaimanakah kemajuan teknologi membantu dalam penulisan dan penyampaian laporan penyelidikan? Huraikan. (5 markah)
- S14** Kenalpasti bab dan beri huraian ringkas bagi setiap bab yang biasa terdapat dalam laporan pelajar yang melaksanakan pembangunan sistem aplikasi. (12 markah)
- S15** Bagaimana anda akan menghuraikan proses penyelidikan? (12 markah)
- S16** Jadual 1 dan Jadual 2 merupakan ringkasan dapatan analisa data penyelidikan yang dijalankan disebuah universiti. Bilangan sampel pelajar kajian adalah 25 orang.

Anda dikehendaki untuk:

- a. Menerangkan maklumat yang terdapat dalam setiap jadual.

Jadual 1: Minimum, Maksimum, Min and Sisihan Piawai

	Minimum	Maksimum	Min	Sisihan Piawai
IQ Score	112.00	124.00	118.2400	3.24397
TEE	270.00	410.00	354.1200	38.06499
UAScore	58.00	86.00	73.3600	7.74532
Sample size	25	25	25	

Note: TEE – Tertiary Entrance Examination, UAScore – University Average Score

(5 markah)

Jadual 2: Korelasi antara pembolehubah

		IQ Score	TEE	UA Score
IQ Score	Pearson Correlation Sig. (2-tailed)	1		
TEE	Pearson Correlation Sig. (2-tailed)	.767(**)	1	
UA Score	Pearson Correlation Sig. (2-tailed)	.598(**)	.637(**)	1

** Correlation is significant at the 0.01 level (2-tailed).

Note: TEE – Tertiary Entrance Examination, UAScore – University Average Score

(9 markah)

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- S17** Diberikan spesifikasi perisian, yang mudah. Kenalpasti dan jelaskan perkara yang mungkin tertinggal dalam spesifikasi ini jika ada.

The system must convert Celsius into Fahrenheit temperatures. The user should enter a numeric value (representing the temperature in °C) and the system should respond with the equivalent temperature in Fahrenheit.

(10 markah)

- S18** Nilaiikan abstrak berikut. Bincangkan dalam bentuk baik atau buruk, berikan cadangan bagaimana abstrak ini boleh diperbaiki.

This article investigates the application of ANNs to software development cost estimation. It begins by discussing software predictions techniques such as COCOMO (Boehm, 1982) and Delphi (Helmer-Heidelberg, 1966). The article identifies the process of software cost estimation and uses this as a basis on which to apply the ANNs developed for this project. Equations are presented showing how improvements can be made to the backpropagation algorithm used in ANN training. ANN simulation is also discussed. An evaluation of the results from the ANNs is presented and these results compare favorably with existing techniques identified in the paper.

(15 markah)