KOLEJ UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

ACADEMIC YEAR 2021/2022

APRIL/MAY EXAMINATION

COMPUTER SCIENCE BACS3033
SOCIAL AND PROFESSIONAL ISSUES

THURSDAY, 5 MAY 2022 TIME: 2.00 PM – 4.00 PM (2 HOURS)

BACHELOR OF COMPUTER SCIENCE (HONOURS) IN DATA SCIENCE
BACHELOR OF COMPUTER SCIENCE (HONOURS) IN SOFTWARE ENGINEERING

BACHELOR OF INFORMATION SYSTEMS (HONOURS) IN ENTERPRISE INFORMATION SYSTEMS

BACHELOR OF INFORMATION TECHNOLOGY (HONOURS) IN SOFTWARE SYSTEMS DEVELOPMENT

Instructions to Candidates:

Answer **ALL** questions.

Question 1

Read the article below, and answer the following questions.

Malaysia's big data market to grow to US$1.9bil by 2025: IDC

MALAYSIA's big data analytics (BDA) market in Malaysia is set to grow from US$1.1 billion in 2021 to US$1.9 billion in 2025, according to research firm IDC.

The study, commissioned by the Malaysia Digital Economy Corporation (MDEC), forecasted that the BDA market in Malaysia will grow and that the services sector will contribute 64% of the total data-driven spending, with the banking and telecommunications contributing nearly a third, MDEC said in a statement.

"Covid-19 has been a true game-changer in terms of demand for BDA, backed by the surging demand for data and cloud services, both accelerating digital transformation and enabling business sustainability," said Raymond Siva, senior vice president, investment and brand, and chief marketing officer (CMO).

He said companies investing in BDA will continue to expand their presence by having Malaysia as a base for its regional and global businesses and operations to manage its core functions.

Citing another recent analysis by IDC Worldwide Big Data and Analytics Spending Guide 2020, Siva noted that Asia Pacific's BDA industry is set for further growth.

"APAC's BDA industry can expect to grow at the fastest rates and in excess of 15% compound annual growth rate (CAGR) of between 2019 and 2024 due to increased BDA investments by many start-ups and businesses," he claimed.

The report also forecasted that the revenues for BDA solutions has reached US$22.6 billion in 2020, with a year-over-year (YoY) growth of 12% in Asia/Pacific.

According to MDEC, DataMicron Systems Sdn. Bhd., a local MSC Malaysia company; and TDCX, a customer experience service provider, have started embarking on an aggressive expansion starting with BDA as part of their new investment portfolio.

MDEC said that BDA is central to Malaysia's digital economy, and this has resulted in the explosive growth of other digital technologies such as artificial intelligence (AI), Internet of Things (IoT), and advanced automation.

Source: https://www.digitalnewsasia.com/business/malaysias-big-data-market-grow-us19bil-2025-idc

a) Apply the Lessig's Four Modalities Model and explain the challenges of big data analytics faced by Malaysia's Small and Medium-Sized Enterprises (SMEs). (16 marks)

b) In your opinion, discuss the most important forecasted *data analytics* trends in 2022. (9 marks)

[Total: 25 marks]

Question 2

a) The global pandemic had forced movie theatres and production companies to close temporarily. This had an influence on the theatrical and home or mobile entertainment industries in 2020. Viewers were compelled to stay at home for their digital entertainment while millions of people were confined. Binge gaming was also seen during the pandemic.

Explain how digital entertainment adversely impact mental wellness. (10 marks)

b) Suggest **THREE (3)** ways to mitigate the harmful consequences of digital entertainment. (6 marks)

c) Fair use is an affirmative defense used in response to a copyright owner's assertion that someone is infringing on their copyright. Fair use allows a party to use a copyrighted work for purposes such as criticism, commentary, news reporting, teaching, scholarship, or research without the permission of the copyright owner.

Explain **THREE (3)** ways to avoid from using copyrighted work in a non-fair use way. (6 marks)

d) List **THREE (3)** open-source security challenges. (3 marks)

[Total: 25 marks]

Question 3

a) Internet governance is the creation and implementation of agreed principles, norms, rules, decision-making procedures, and programmes that impact the evolution and usage of the Internet by governments, the commercial sector, and civil society in their respective roles.

Analyse and explain any **THREE (3)** challenges for Internet governance. (6 marks)

b) Based on your answer in Question 3 a), investigate and discuss **THREE (3)** future of Internet governance. (6 marks)

c) Determine and explain which ethical theory provides the most convincing explanation of how to live one's life to the best of one's ability. (6 marks)

d) Discovering workplace misbehaviour can be stressful, but there are safeguards in place to protect employee from retaliation if they accuse their bosses of breaking the law. Unfortunately, these safeguards only go so far, and when faced with the decision to expose misconduct by their company, many whistleblowers experience challenges.

Examine and discuss **THREE (3)** challenges faced by a whistleblower. (7 marks)

[Total: 25 marks]

Question 4

a) Virtual meetings, such as conference calls and web meetings, are a part of modern business. While many of us have become more security conscious in our online contacts, virtual meeting security is typically a last-minute consideration.

Discuss how eavesdropping the modern business happens. (6 marks)

b) List **FOUR (4)** solutions to solve the problem in Question 4 a) above. (8 marks)

c) Figure 1 shows that Malaysia came in eighth out of 194 countries in 2021's Global Cyber Security Index. With 98.06 points, Malaysia was only fractionally behind Singapore, South Korea and Spain.

Although Malaysia is a small country, it has been in the top 10 since the first report was released in 2014. In your opinion, how is this possible? (11 marks)

Rank	Country	Points
1	U.S.	100.00
2	U.K.	99.54
2	Saudi Arabia	99.54
2	Estonia	99.48
5	Singapore	98.52
5	South Korea	98.52
5	Spain	98.52
8	**Malaysia**	**98.06**
8	Russia	98.06
8	UAE	98.06
12	Japan	97.82
40	China	92.53
Last	North Korea	1.35

Source: International Telecoms Union

Figure 1: Global Cyber Security Index 2021

[Total: 25 marks]