

CONFIDENTIAL



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : TECHNOLOGY MANAGEMENT
COURSE CODE : BPA 21703
PROGRAMME CODE : BPB / BPC / BPP
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

TERBUKA

CONFIDENTIAL

- Q1** (a) Define the function of Technology Planning in an organization. (2 marks)
- (b) Technology planning is a key enabler for the systems engineering to function in any organization.
- Explain the **FIVE (5)** processes of Technology Planning. (10 marks)
- (c) Define Technology Forecasting based on Bright (1968). (2 marks)
- (d) List **SIX (6)** good Technology Forecast planning. (6 marks)
- (e) Haris is a manager of Future Technolgy Sdn. Bhd. He is planning to develop a new computer technology. In order to develop this new technology, Haris asked you, as his technology executive, to prepare information of technology forecasting methods. Haris mentioned that he knows an expert in computer technologies who significant amount of good data from previous experience.
- Prepare the information of forecasting methods based on situation in **Q1(e)**. (5 marks)
- Q2** (a) Give **TWO (2)** definition of technology capabilities. (4 marks)
- (b) Explain **THREE (3)** technology capabilities that a firm must have in order to compete in today's business environment. (9 marks)
- (c) Distinguish **TWO (2)** elements of acquiring capabilities and converting capabilities. (12 marks)
- Q3** (a) Define Research and Development (R&D). (3 marks)
- (b) Demonstrate **FOUR(4)** stages of technology development with appropriate example for each stage. (12 marks)

Table Q3: Technology Acquisition Scenario

Case	Statement
Case 1	Company ABC, is focusing on the research and development of regenerative medicine using human stem cell technology, with a proposed investment of approximately USD 1.63 million and commercialized it to the market.
Case 2	Company A, a biotechnology company from India, plans to invest RM500mil in the first phase of its new biomanufacturing and research development (R&D) facility for insulin product in Bio-Xcell, Iskandar Johor. This is 60:40 joint venture initiative between Biotech Corp and UEM Land Holdings Sdn. Bhd.
Case 3	Dagang NeXchange Berhad ("DNeX"), through subsidiary company DNeX Oilfield Services Sdn Bhd, has signed a contract agreement to provide directional drilling equipment to Baker Hughes (M) Sdn Bhd ("BHGE")
Case 4	In early 2013, FRIM have gave to one of Malaysian timber company its exclusive right to the use of the technology in Malaysia
Case 5	Company C, buy spray-based intranasal vaccine against Pneumonia Pasterurellosis disease in shee and goats from Profound Vaccine Sdn. Bhd.

- (c) (i) Identify methods of acquiring technology based on the scenario as given in **Table Q3**. (5 marks)
- (ii) Compare methods of technology acquisition based on case 1 to 5. (5 marks)

Q4 (a) Differentiate **FIVE (5)** technology transfer categories with an appropriate example. (15 marks)

(b) FuelGainKit™(FGK) exhibits excellent practical solutions through total replacement of the conventional carburetor system with a dedicated fuel injection mechanism that provides better fuel economy and power delivery. It is a product developed through a collaborative research and development (R&D) effort of Malaysian researchers from Universiti Tun Hussein Onn Malaysia (UTHM) and Universiti Teknologi Malaysia (UTM). The foundation of this grant application was based on extensive research and development (R&D) works through Sciencefund Grant MOSTI S017-UTHM, Research Acculturation and Collaborative Effort (RACE) Grant MoHE Vot 1117 UTHM-UTM and Geran Universiti Penyelidikan (GUP) UTM Vot 01H84-UTM.



Figure Q4: Fuel Gain Kit

UTHM is planning to transfer this technology to industries.

Use **TWO (2)** appropriate of technology transfer channels to helps UTHM transfer its FuelGainKit™(FGK) to industries.

(10 marks)

- END OF QUESTIONS -