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Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

**COURSE NAME** : SUSTAINABLE CONSTRUCTION  
MANAGEMENT

**COURSE CODE** : BFC32703

**PROGRAMME CODE** : BFF

**EXAMINATION DATE** : DECEMBER 2019 / JANUARY 2020

**DURATION** : 2 HOURS 30 MINUTES

**INSTRUCTION** : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **SIX (6) PAGES**

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**Q5** Which of the following actions are **TRUE** about possible strategies for sustainable construction?

- I. Ahmad identifies materials to recycle at each phase of construction and methods to support the on-site recycling effort
- II. Ah Cheng identifies environmentally friendly building materials as well as harmful and toxic materials that should be avoided
- III. Aranavi applied specific procurement strategies to ensure sustainable construction requirements are addressed
- IV. Alibaba identifies reusable materials and methods to facilitate the future reuse of a facility, systems, equipment, products and materials.

- A. All of the above
- B. II and III
- C. I, II and IV
- D. IV only

**Q6** Which of the followings are **TRUE** about the principles of implementing sustainable in construction?

- I. Apply life cycle cost analysis and true cost
- II. Create a healthy, non-toxic environment
- III. Pursue quality in creating the built environment
- IV. Use renewable or recyclable resources

- A. All of the above
- B. II and III
- C. I, II and IV
- D. IV only

**Q7** Which of the followings is **FALSE** about sustainable construction in Malaysia?

- A. The issue of sustainable development has emerged as one of the top issues in the Eight Malaysia Plan (2001 – 2005). The government gave high priority to research and development as one of their strategy for sustainable development
- B. Many local universities (government and private entities) shows interest in researching on the sustainable issues in construction
- C. The Construction Industry Development Board Malaysia (CIBD) gave concerted efforts in dealing with sustainable issues through extensive researches
- D. The subject of sustainability continues to be one of the important agenda of the government since it has been identified as one of the four key thrusts in the Ninth Malaysia Plan, which was unveiled on the 21st April 2006.

**Q8** The followings are criteria for Green Building Index **EXCEPT**?

- A. Material and resource
- B. Sustainable site planning and management
- C. Creativity and Innovation
- D. Water efficiency



- Q9** Which of the following statements is **FALSE** about constructability?
- A. Constructability is a systematic and innovative methodology with a multi-disciplinary approach targeted to achieve better value of construction products through decision making process
  - B. Constructability reviews are easily managed for projects where the contractor is determined beforehand
  - C. The contractor is an integral part of all design meetings and reviews all documents, plans, drawings, specifications, tender documents and procurement schedules
  - D. One of a project management technique for reviewing construction processes from start to finish during the design/pre-construction phase
- Q10** Which of the following statements is **FALSE** about Value Management?
- A. Parties involved in the planning and design development tend to work in 'team effort'.
  - B. Value Management provides a very effective tool to integrate this diverse discipline and parties to work on a common goal and adopting a very structured methodology
  - C. The fundamental contribution by the Value Management technique is to eliminate the unnecessary cost which does not contribute to the value of the services, products, systems and that obviously includes the construction projects
  - D. Value management is a systematic and innovative methodology with a multi-disciplinary approach targeted to achieve better value of construction products through the decision making process errors or omissions in performing design, construction management or other services

**SECTION B – ANSWER ALL QUESTIONS**

- Q1** (a) Define Green Building. (2 marks)
- (b) Green Building Index (GBI) is Malaysia's industry recognized green rating tool for building to promote sustainability in the built environment and raise awareness among developers, architects, engineers, planners, contractors and the public about environmental issues and responsibility to the future generations. Describe **THREE (3)** importance of the GBI to the construction industry. (6 marks)
- (c) A three storey Jusco Mall to be constructed in city centre surrounded by residential area. Explain **SIX (6)** GBI's criteria to be fulfilled before the building can be awarded a green building certification. (12 marks)

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- Q2** (a) Organization is a unit within a company in which many projects are managed as a whole. It consists of a group of people who have different talents working together toward a common goal. List down **EIGHT (8)** management functions in an organizational approach. (8 marks)
- (b) The organizational structure is defined as a formal coordination and communication patterns by the management to define responsibilities, goal setting and task division. Propose the most suitable organization structure for organization with these characteristics;
- Separated projects between parent system
  - Frequent major changes are needed in the project
  - The team leader must act like an entrepreneur
  - Team leader has full responsibility over the project
- (2 marks)
- (c) Point out **FIVE (5)** advantages and disadvantages of the suggested organizational structure in **Q2 (b)** compared to the other two organizational structures. (10 marks)

**Q3** You are an engineer at Perkasa Bina Sdn Bhd, Batu Pahat. You are required by your director to prepare a schedule of a new project, which is 'To construct and complete 4 storeys building of Sek. Keb. Pintar Jaya at Parit Raja, Batu Pahat Johor'. Activities and details of project are listed in **TABLE Q3**.

**TABLE Q3:** Activities involve in the project

Bil	Activity	Activity Name	Duration (Week)	Successor
1	Preliminaries Work	A	2	<b>B</b>
2	Piling	B	3	<b>C</b>
3	Foundation	C	4	<b>D,E</b>
4	Ground Beam	D	2	-
5	Column	E	3	<b>F</b>
6	Slab	F	2	<b>G,H</b>
7	Roof Beam	G	4	-
8	Trusses	H	5	<b>I</b>
9	Building Envelope	I	3	<b>J</b>
10	Architect Finishing	J	2	-

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Based on the **TABLE Q3**,

- (a) Prepare a logical network diagram using Precedence Diagram Method (PDM) (10 marks)
- (b) Calculate ES, EF, LS, LF from the project activities. (5 marks)
- (c) Determine the total float for each activity. (5 marks)

**Q4** There are components in quality management to ensure the construction project is completed within time and expected quality.

- (a) Explain the importance of the following quality management:
  - (i) Cost-control management
  - (ii) Risk management
  - (iii) Procurement management
  - (iv) Communication management(8 marks)
- (b) Construction quality management is one of the pillars in project management and project delivery. Good construction quality management can reduce the number of mistakes and rework in a project. This can help projects completed on time and within budget, thus satisfying the expectations and requirements by clients. Describe **FOUR (4)** main elements of quality management. (8 marks)
- (c) Construction companies face many challenges in delivering project. Excessive resources includes man-power, materials and machinery can result in financial loss. On the other hand, insufficient resource may lead to poor productivity and quality in the later stages of the project. As a project manager, propose the strategies that need to be incorporated into resource management system to optimise the man power and materials in construction resources. (4 marks)

**-END OF QUESTIONS-**

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