



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

COURSE NAME : ADVANCED BUILDING SYSTEM  
(ABS) CONSTRUCTION

COURSE CODE : BNC 41403

PROGRAMME CODE : BNC

EXAMINATION DATE : DECEMBER 2019/JANUARY 2020

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

**TERBUKA**

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

- Q1** Industrialized Building System (IBS) is an advanced technology in construction industry.
- (a) Define:
- (i) Industrialized Building System (IBS)
  - (ii) Conventional Construction
- (3 marks)
- (b) Point out and discuss **FIVE (5)** types of IBS as defined by CIDB.
- (10 marks)
- (c) Discuss the differences between pre-stressed concrete and post-stressed concrete.
- (4 marks)
- (d) Sketch and explain the challenges and lesson learn along the construction industry value chain.
- (8 marks)
- Q2**
- (a) Briefly describe **THREE (3)** types of flooring systems.
- (6 marks)
- (b) Distinguish between dry and wet connections for joint method of IBS elements.
- (4 marks)
- (c) Explain the construction process of framed structure in precast factory and site erection.
- (5 marks)
- (d) Discuss sustainability of Industrial Building System in construction development.
- (10 marks)

TERBUKA

- Q3** (a) Explain **THREE (3)** characteristics of Concrete Masonry Unit (CMU).  
(5 marks)
- (b) Dry Cast and Wet Cast are two methods in order to produce concrete block. Differentiate between Dry Cast and Wet Cast method.  
(6 marks)
- (c) Sketch and name **FOUR (4)** types of the finishing pattern for concrete block laid up.  
(8 marks)
- (d) Differentiate the characteristic between 'Normal Concrete Block' and 'Lightweight Concrete Block'.  
(6 marks)
- Q4** (a) Classify **THREE (3)** parts of IBS score components and state the maximum score for each part.  
(6 marks)
- (b) Explain **THREE (3)** principles of IBS Scoring  
(5 marks)
- (c) **Table Q4 (c)** is referred. Main buildings in the development consist of 4 blocks of apartments and 1 block of office building. The IBS score for each building was calculated and given. Calculate the IBS score for the whole development project.  
(10 marks)
- (d) Calculate the wall length for external wall and internal wall as shown in **Figure Q4 (d)**.  
(4 marks)

**-END OF QUESTIONS -**

TERBUKA

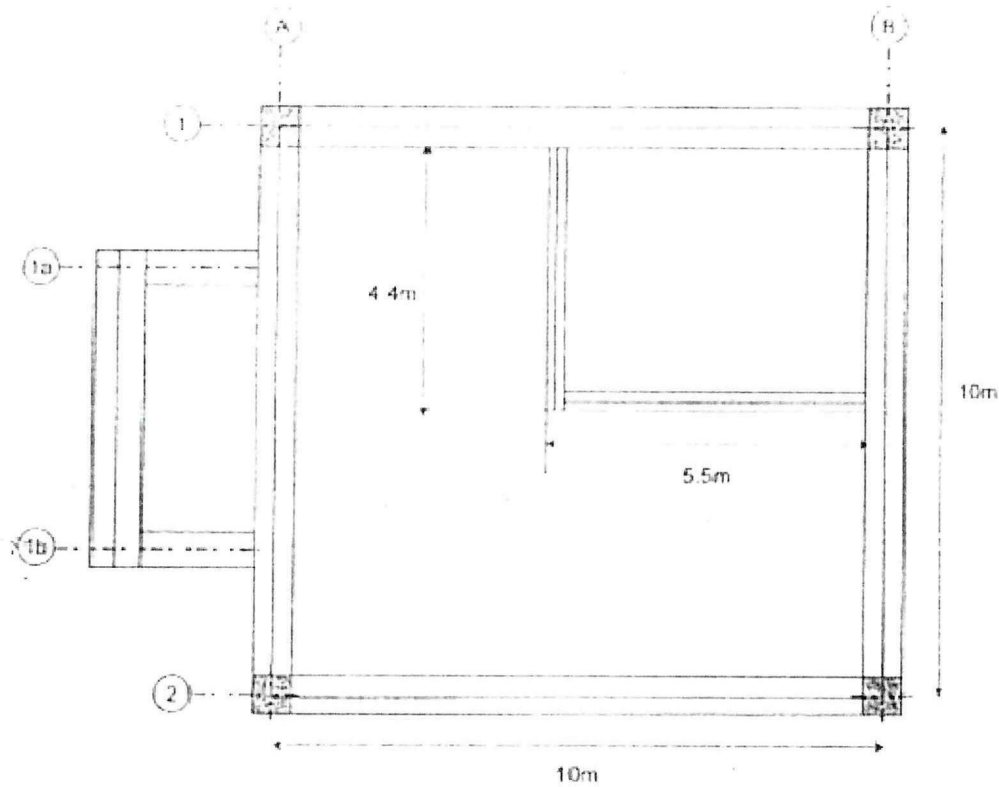
**FINAL EXAMINATION**

SEMESTER / SESSION : SEM I / 2019/2020  
 COURSE NAME : ADVANCED BUILDING SYSTEM  
 (ABS) CONSTRUCTION

PROGRAMME CODE : BNC  
 COURSE CODE : BNC 41403

**Table Q4 (c)**

No	Block (building)	Building types	Storey	Construction area, $Q_{ST}$ (m <sup>2</sup> )	IBS Score
i	A	Apartment	5	3000	83
ii	B		5	3000	87
iii	C		4	3200	35
iv	D		4	3200	47
v	E	Office	3	3000	75



**Figure Q4 (d)**

**TERBUKA**