



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2010/2011**

COURSE NAME : CONSTRUCTION ENGINEERING
COURSE CODE : BFC2062 / BFC21002
PROGRAMME : 2 BFF
EXAMINATION DATE : APRIL / MAY 2011
DURATION : 2 HOURS AND 30 MINUTES
INSTRUCTION : ANSWER 4 (FOUR) QUESTIONS ONLY.

THIS PAPER CONSISTS OF FIVE (5) PAGES

- Q1**
- (a) With an appropriate sketch define 'set' in driven pile.
(7 marks)
- (b) As site engineer, explain your action if one of the driven reinforce concrete pile be in a sloping position which more than 1:75.
(6 marks)
- (c) State five (5) keys purpose to have a site layout prior construction development.
(7 marks)
- (d) State five (5) main reasons to conduct a soil investigation in construction site.
(5 marks)
- Q2**
- (a) A ground floor construction which is continuously supported by the ground is called a solid floor. Explain three (3) headings of solid floor below with the sketch.
i) Hardcore
ii) Blinding
iii) Concrete bed.
(15 marks)
- (b) Briefly discuss the advantages and diadvantages using precast concrete.
(6 marks)
- (c) Explain in detail the functions of a floor below.
i) Fire resistance
ii) Thermal Insulation
(4 marks)

- Q3** (a) Define scaffolding and state its purpose?
(4 marks)
- (b) List three (3) types of scaffolding and explain each of them.
(6 marks)
- (c) Explain the function of each plant and machineries below;
- i. Bulldozers
 - ii. Scrapers
 - iii. Graders
 - iv. Tractor Shovel
 - v. Excavating Machines
 - vi. Pipe Layer
- (15 marks)
- Q4** (a) You as a site engineer are assigning to propose the planning of the usage of the plant and equipment use at your project. Base on your knowledge, explain three (3) General Considerations of Builder's Plant.
(20 marks)
- (b) State the advantages of buying plants rather than hire it.
(5 marks)
- Q5** (a) With aid of sketches differentiate construction joint, contraction joint and expansion joint in terms of their function and installation details.
(15 marks)
- (b) As a new airport runway is very large, continuous run concreting (CRCR) method is to be applied. CRCR is a highly mechanised form of concreting, where dowels are automatically inserted into the concrete as it is laid to form wet jointing. It is divided into a number of bays, to ease concrete pouring. Each bay is 13.5 m x 30 m. Suggest a systematic layout arrangement of concrete pouring for each bay using this method.
(10 marks)

TERJEMAHAN BAHASA MALAYSIA

- S1 (a) Dengan bantuan lakaran tentukan 'set' pada cerucuk *driven*.
(7 markah)
- (b) Sebagai jurutera, terangkan bagaimana tindakan kamu apabila suatu cerucuk dari konkrit bertetulang berada dalam posisi bercerun lebih daripada 1:75.
(6 markah)
- (c) Nyatakan lima (5) kunci utama dalam mendapatkan pelan tapak sebelum sesuatu pembangunan pembinaan dilaksanakan.
(7 markah)
- (d) Nyatakan lima (5) sebab utama penyiasatan tapak dilaksanakan.
(5 markah)
- S2 (a) Pembinaan bagi suatu aras bawah berterusan yang di sokong oleh tanah itu sendiri dikenali sebagai lantai padu. Berpandukan lakaran, terangkan tiga (3) maksud dibawah yang berkaitan dengan lantai padu.
(j) *Hardcore*
(ii) *Blinding*
(iii) *Concrete bed*.
(15 markah)
- (b) Bincangkan kelebihan dan juga kekurangan yang ada dalam penggunaan konkrit pra-tuang.
(6 markah)
- (c) Terangkan dengan terperinci fungsi suatu lantai terhadap;
i. Kalis api
ii. Penebatan haba
(4 markah)

- S3 (a) Apakah perancah dan nyatakan tujuan ia digunakan?
(4 markah)
- (b) Namakan **tiga (3)** jenis perancah dan terangkan satu persatu.
(6 markah)
- (c) Terangkan fungsi setiap logi dan peralatan dibawah,
i. Bulldozers
ii. Scrapers
iii. Graders
iv. Tractor Shovel
v. Excavating Machines
vi. Pipe Layer
(15 markah)
- S4 (a) Anda adalah jurutera tapak yang ditugaskan bagi mencadang perancangan penggunaan logi serta peralatan untuk suatu projek. Berdasarkan pengetahuan kamu, terangkan **tiga (3)** Pertimbangan Am Suatu Logi.
(20 markah)
- (b) Nyatakan kelebihan membeli dapada menyewa suatu logi.
(5 markah)
- S5 (a) Berpandukan lakaran kamu, bezakan sambungan pembinaan, sambungan penguncupan dan sambungan pengembangan melalui fungsinya dan pemasangan terperinci.
(15 markah)
- (b) Apabila suatu landasan kapalterbang menjadi semakin luas, kaedah *continuous run concreting (CRCR)* digunakan. *CRCR* adalah suatu kaedah konkrit yang *'highly mechanised'*, dimana *dowels* secara otomatik dimasukkan kedalamnya semasa ia masih basah (belum mengeras) untuk membentuk sambungan basah. Ia terbahagi kepada beberapa ruang untuk memudahkan kerja menuang konkrit tersebut. Setiap ruang bersaiz 13.5 m x 30 m. Cadangkan suatu kerangka sistem yang sistematik semasa penuangan konkrit terhadap ruang tersebut dengan menggunakan kaedah ini.
(10 markah)