
UNIVERSITI SAINS MALAYSIA

1st. Semester Examination
2004/2005 Academic Session

October 2004

EAS 665/4 – Bridge Engineering

Duration: 3 hours

Instructions to candidates:

1. Ensure that this paper contains **NINE (9)** printed pages, including appendices, before you start your examination.
2. This paper contains **FIVE (5)** questions. Answer **ALL (5)** questions.
3. All questions carry equal marks.
4. All questions **MUST BE** answered in English.
5. Each question **MUST BE** answered on a new sheet.
6. Write the answered question numbers on the cover sheet of the answer script.

1. (a) List out **FIVE (5)** factors influencing the wind pressure on a bridge.

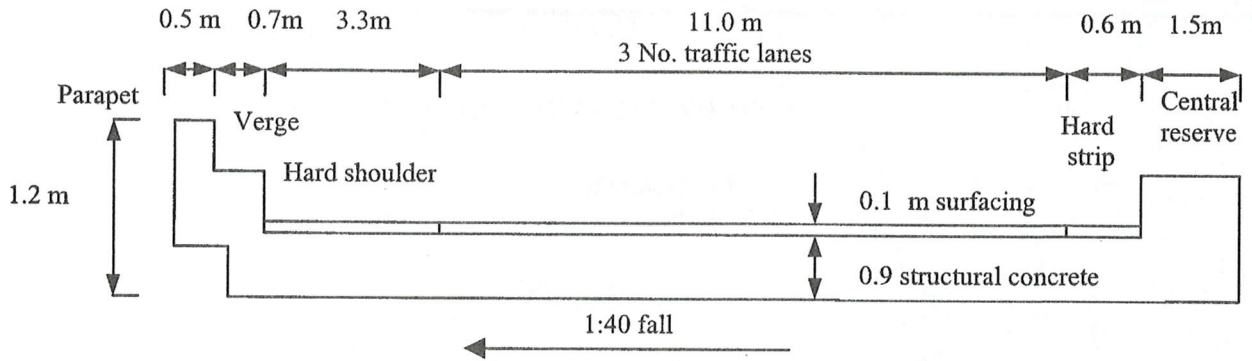


Figure 1.0

(5 marks)

(b) Fig 1.0 shows the cross-section of a highway underbridge of composite slab, zero skew and a span of 15 m. The bridge is situated in Kuala Kurau area at a site which is 120 m above sea level and there are no special funneling, gust or frost conditions. The anticipated effective bridge temperature at the time of setting the bearing is 16°C. Assume open parapet.

- i. Calculate the diameter at neutral axis for HA and HB loading.
- ii. Summarize the load on central reserve and verge, longitudinal, skidding and collision to parapet.
- iii. Calculate the average of intensity on footway loading.

(15 marks)

2. (a) Define HA and HB loading with respect to highway bridge live loads.

(4 marks)