

EXAMINATION FOR INTERNAL STUDENTS

For The Following Qualification:-

B.Sc.

ES2223: Technology Studies

COURSE CODE : ENVS2223

UNIT VALUE : 0.50

DATE : 09-MAY-03

TIME : 14.30

TIME ALLOWED : 3 Hours

ENVS 2223 TECHNOLOGY STUDIES 1

Answer 5 questions only

1. Compare **THREE** types of structural frame suitable for the design and construction of multi-storey buildings.
(20 Marks)

2. Define buildability as a key element in the production of buildings and appraise the value of this concept at various stages of a building project.
(20 Marks)

3. Appraise the factors affecting the location of temporary site accommodation, materials storage areas and movement corridors on a major construction project.
(20 Marks)

4. Discuss the factors that will influence the economic selection, deployment and control of plant on a large city centre development project.
(20 Marks)

5. The philosophy of current safety legislation has been to place the onus onto contractors to assess hazards and risks, and to determine their own appropriate measures. This is in contrast with health and safety legislation of previous decades, which imposed mandatory and prescriptive requirements.

Explain how the above statement affects a main contractor's site staff on a project, citing examples of recent legislation.

(20 Marks)

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6. A partly completed shopping mall has stood for over two years following the bankruptcy of the developer-builder. At shut down the work was in full progress with the in-situ reinforced concrete frame 85 per cent complete, the atrium steel work partly erected and work had started on the precast cladding and facing brick envelope. A new owner has appointed a main contractor to complete the complex.

Identify technological items for concern for the main contractor prior to commencement and discuss the actions to be taken.

(20 Marks)

7. (a) Discuss the functional requirements of a foundation and examine with examples the characteristics of soil which influence foundation design.

(10 Marks)

(b) Describe a method of deep piling which may be used in clay soils in town centre locations, listing the criteria used for your choice.

(10 Marks)

8. A condition survey has been carried out on a late Victorian, solid wall, end of terrace, four-storey property. It has revealed long term damp penetration to the internal surfaces of the rear external wall of the property at each storey level and also damp penetration to the lower parts of all walls in the semi-basement.

(a) Describe possible causes of damp in these situations, and recommend remedial action to eradicate the dampness.

(10 Marks)

(b) Describe other investigations which should be carried out on the structure of the building as a consequence of finding damp penetration.

(10 Marks)

END OF PAPER