

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART III SUPPLEMENTARY EXAMINATIONS – AUGUST 2004
AAR 3203 – BUILDING SERVICES II

Instructions

Time : 4 Hours

Answer Question 1 and any other two.

QUESTION 1

- a) Write brief notes on electrical circuits, electric accessories and telephone points within a building. [16]
- b) A factory measuring 45 by 10 by 4m in height requires a service illuminance of $600l_x$ on the work benches which are set 0,85m above the floor. The 65w tabular fluorescent lamps chosen have a luminous efficacy of $80 lm/w$. They are to be mounted on the ceiling near spherical diffuser luminaires which have DLOR of 50%. The room reflectances are 0,5 for the ceiling and 0,3 for the walls; 0,8 is assumed maintenance factor. Use Luman's Method of design to calculate the number of lamps required and suggest a suitable layout. Table I has been provided for this question. [18]

QUESTION 2

- a) Write a brief account on precautions considered on electrical wiring within a building so as to minimise fire outbreaks due to electricity faults. [15]
- b) Discuss briefly fire fighting mechanism that you can recommend for a 64 storey commercial building. [18]

QUESTION 3

- a) Write brief notes on light planning and designing for any multi-storey building. [20]
- b) Briefly discuss situations most suitable for escalators use paying attention to their merits over lifts. [13]

QUESTION 4

Discuss how you can do the following:

- a) protect a residential building from lightning. [12]
- b) Provide emergency electricity to a city hotel. [12]
- c) Improve the accoustics of a concert hall. [9]