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**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

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**Higher National Diploma in Engineering (BSE)**

**3<sup>rd</sup> Year, Second Semester Examination – 2016**

**BSE3204–Ancillary Services of Building**

Instructions for Candidates:

Answer any **four (4)** questions.

All questions carry equal marks.

No. of questions: 5

No. of pages: 3

Time: Two (2) hours

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01. Fire safety in a building should be addressed in several fronts and hence would need a multi-disciplinary approach. There are many standards and specifications that can be used. This is briefly presented to highlight various issues involved.

(a) List the two major components of the fire safety. [05 marks]

(b) Lot of emphasis was placed on fire resistant construction. List the 5 major design concerns. [05 marks]

(c) Also, provide brief description of at least three of these major design concerns. [10 marks]

(d) List the 4 major concrete practices that are adopted in Sri Lanka with respect to various grades and constituent material in the context of performance under fire conditions. [05 marks]

02.

(a) Categorize the different types of transmission media used in data transmission systems. [05 marks]

(b) List 4 major commonly used Broadband Internet access methods. [08 marks]

(c) Also, briefly describe the above mentioned 4 major commonly used broad-band access methods. [12 marks]

03. A key telephone system was originally distinguished from a private branch exchange (PBX), in that it did not require an operator or attendant at the switchboard to establish connections between the central office trunks and stations, or between stations. Technologically, private branch exchanges share lineage with central office telephone systems, and in larger or more complex systems, may rival a central office system in capacity and features. With a key telephone system, a station user could control the connections directly using line buttons, which indicated the status of lines with built-in lamps.

- (a) What is meant by 'business telephone system'? [03 marks]
- (b) Explain the home and small-business usage of the Private Branch Exchange system (PBX)? [05 marks]
- (c) Give brief description for the following:
  - (i) PABX System. [03 marks]
  - (ii) PBX Phone System. [03 marks]
  - (iii) IP PBX Phone System. [03 marks]
  - (iv) Hosted PBX System. [03 marks]
- (d) Features provided by a PBX System: A PBX phone system is traditionally used by medium to large sized businesses and corporations to reduce phone costs and increase call management. Regardless of business size a PBX also gives a professional sound to callers. Additionally, a PBX system gives businesses more robust call features than a standard telephone service would. List at-least 8 of those more robust call features? [05 marks]

04.

- (a) What is meant by satellite communication? [05 marks]
- (b) What are the requirements for a satellite to be geostationary? [08 marks]
- (c) Briefly explain the above-mentioned requirements. [12 marks]

05.

- (a) Briefly explain what is a 'lift-well'. [04 marks]
- (b) Explain the differences between lifts and 'escalators'. [04 marks]
- (c) Mention what degree to the horizontal found usually in slopes of stairs. [03 marks]
- (d) State the type of metal commonly used to make the structural assembly of an escalator. Also how often an escalator needs to be inspected. [03 marks]
- (e) What are the three (3) major components of an "Emergency breaker controller"? [06 marks]
- (f) Only authorized persons, who have been approved by the electrical engineer to government, can take up maintenance of elevators. The agency must inspect the lift once in the quarter and should attend to all calls as and when required. The agencies are supposed to undertake the routine works. Name few of them (at-least 4 of them). [05 marks]