SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA

SEMESTER END EXAMINATIONS (REGULAR) APRIL – MAY - 2017

B. ARCH III YEAR VI SEMESTER

BUILDING SCIENCE AND SERVICES (BS-6)

(VENTILATION, COMMUNICATIONS AND SECURITY SYSTEMS)

Maximum Marks – 50 **Time – 2.00 Hours**

a) Answer any Two questions out of 1to 4 questions.
b) Question No.5 is compulsory and answer any four out of six sub-questions.

Q1. Explain how Size, Location and Orientation of openings in the building influence the Natural Ventilation inside the building? Assume any climatic condition and suggest the suitable Natural Ventilation methods. **(15M)**

Q2. a) What is a Refrigeration Cycle? What are the common types of refrigerants used? **(15M)**
b) Explain the different types of Semi-Centralized Air-Conditioning system with sketches and labeling.

Q3. a) Write short notes on IBMS. Suggest different types of automation systems that can be adopted in an Institutional Building to make it energy efficient. **(10M)**
b) Write about classification of buildings as per NBC for fire safety. **(5M)**

Q4. a) Explain the working principle of a lift with sketches. **(5M)**

b) A group of six lifts with a capacity of 20 persons and a car speed of 2.5 m/s are specified for an office building of G+30 storeys having floor area of 12,000 Sq.m with a floor height of 3 mts. The clear door width is 1.1M and the door opening speed is 0.4 m/s. Estimate the Interval and quality of service to be provided. **(10M)**

P.T.O

Q5. Write short notes on any FOUR of the following: **(4x5= 20M)**

i) Explain the following
   a) Bernoulli's Effect
   b) Wind Scoop
ii) Explain the working of Indirect Evaporative cooler.
iii) What is CCTV and what are the different types of CCTVs?
iv) What is Fire-resistance rating?
v) Write about the Handling Capacity of a Lift.
vi) Explain in brief about the working of Mini-Heat Pump in summer and winter.