SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA

SEMESTER END EXAMINATIONS (REGULAR), MAY-2016

B. ARCH, III YEAR, VI SEMESTER

BUILDING MANAGEMENT (BM-6)
(QUANTITIES AND ESTIMATIONS)

Maximum Marks – 60   Time – 2 ½ 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.
c) Scientific Calculator is allowed.
d) Assume Suitable data, if necessary.

Q1. a) Define the terms estimation and Specifications.   (5M)
     b) Write the Units of measurement of the following items of work   (5M)
        i) Earth work   ii) RCC   iii) Sand Filling
        iv) Plastering   v) Sunshade
     c) The Plan and Section of steps are given in Fig 1.0. Calculate the quantity of C.C (1:4:8) steps, calculate
        the quantity of brick masonry required for steps.   (10M)

Q2. a) State and define different approximate methods of estimating engineering structures.   (5M)
     b) Write the difference between detailed estimate and abstract estimate?
     c) Prepare the approximate estimate of a proposed building with the following data   (5M)
        a) Plinth area   = 400 Sq.m
        b) Plinth area rate   = Rs. 25000 per Sq.m
        c) Water Supply and Sanitation   = 12% of the cost of building   (10M)
        d) Electrification   = 7.5% of cost of Building
        e) Fluctuation of rates   = 3% of cost of building

Q3. Prepare the detailed estimate for the following items of work for a building shown in Fig. 2.0
        a) R.R masonry in C.M (1:6) for Footings and basement.   (10M)
        b) Brick work in C.M (1:5) for Super Structure   (5M)
        c) Plastering to Ceiling with C.M (1:3)   (5M)

Q4. Prepare a data sheet and calculate the cost of items given below
        a) CC (1:5:10) using 40mm HBG metal – 1 cum   (10M)
        b) RR masonry in CM (1:4) – 1 cum   (10M)
     Materials and Labour required:
     CC (1:5:10) using 40mm HBG metal – 1 cum
        0.92m³   40mm HBG metal
        ....   Sand
        ....   Cement
        0.2 Nos.   Mason
        1.80 Nos.   Man Mazdoor
        1.40 Nos.   Women Mazdoor
        L.S   Sundries
     RR masonry in Cm (1:4) – 1 Cum
        1.1 Cum   Rough Stone
        0.34 Cum   CM (1:4)
        1.8 Nos.   Mason
        1.40 Nos.   Man Mazdoor
        1.50 Nos.   Women Mazdoor
        L.S   Sundries   **P.T.O**

     Labour charges:
        Mason   Rs. 400/day
        Men Mazdoor   Rs. 350/day
        Women Mazdoor   Rs. 350/day
        Mixing Charges   Rs. 60 Cum

S.No	Materials	Rate at Source	Lead in Km	Conveyance Charges
1	40mm HBG metal	1200/Cum	10MT + 8ST	18 /Cum/Km
2	Sand	600/Cum	20MT + 5CT	16/Cum/Km
3	Rough Stone	150/Cum	5MT + 5ST	15/Cum/Km
4	Cement	7500/MT	At Site	

Q5. a) Calculate the quantity of Cement required in bags for the following items of work: **(4x5=20M)**
      i) C.C 1:4:8 work for Plain Concrete work using 40mm HBG metal for 20m^3 of work.   **(2.5Marks)**
      ii) Brick masonry in CM 1:6 using Country bricks for 20m^3 of work, if 0.5m^3 mortar is   **(2.5Marks)**
      required for 1m^3 of masonry

   b) State the methods of taking out quantities & briefly explain them

   c) State the technical team involved in the estimation

   d) List the provision for different building services as percentage of Structure Cost

   e) For a hipped roof shown in theFig 3.0, Calculate
      a) Length of hip rafer   **(2.5 Marks)**
      b) No. of Common rafer Spaced at 500′MM c/c   **(2.5 Marks)**
        NOTE: Wall Thickness = 300mm
              Eaves Projection = 500mm
              Rise of roof   = 1700mm

   f) The internal dimensions of a room are 6.25 x 4.25m. Find the quantity of Sand filling in basement. The height & thickness of basement are 750mm & 450mm respectively. The wall thickness of room is 230mm.