Registration No:

Total Number of Pages: 2

B.PLAN
15BPLN102

1st Semester Regular/Back Examination 2017-18
FUNDAMENTALS OF BUILDING STRUCTURES
BRANCH: B.Plan
Time: 3 Hours
Max Marks: 100
Q.CODE: B828
Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)

Q1 Answer the following questions: *multiple type or dash fill up type*   **(2 x 10)**
  a) In low degree of elasticity > 5% is called_____, In most elastic strength < 5% is called_____.

  b) It hook's law with in elastic limit _____is proportional to _____.
  c) Two key types forces involved in building and structure are _____ & _____.
  d) In Lami's theorem _____ is proportional to the sign of the angle between the other _____.
  e) The based on the equilibrium structure of beam profile are _____ & _____ structure.
  f) _____ portion of building transfers its gravity load to the earth._____ foundation is suitable for high rise building.

  g) When the load producing bending lie in the centroidal portion is called as_____,when the beam is subjected to such a system of bending load the shear force is zero is called_____.
  h) Pre stressed concrete are two types _____& _____.
  i) _____&_____ codes are mainly used for RCC and steel design.
  j) _____&_____ are two method for RCC design

Q2 Answer the following questions: *Short answer type*   **(2 x 10)**
  a) Define stress and strain?

  b) State and explain hook's law?

  c) What do you mean by bulk modulus?

  d) Define elasticity, plasticity?

  e) Write about component of building?

  f) Differentiate between column and struts?

g) Write about function of foundation?

h) How many types of supports are their and show the diagram of a beam?

i) Write 2 methods of constructing house ?.

j) What do you mean by frame structure?.

Part – B (Answer any four questions)

Q3 **a)** Analysis the assumption of Euller's theory and bending stress, Define shear force and bending moment?. **(6+4)**

b) A mild steel bar tie 30mm is subjected two end axial pole 60 KN. Determine the tensile stress induce in the rod & the elongation. If the unloaded length 6m,the $E=210 \times 10^{6} KN/M^{2.}$ **(5)**

Q4 **a)** Write about equilibrium forces & condition, and principles of equilibrium ? **(10)**

b) Derive lamie's theorem ? **(5)**

Q5 **a)** Write about roof, and the difference between flat roof and sloppy roof. **(10)**

b) Explain about classification of wall? **(5)**

Q6 **a)** What is foundation and it's requirement? Write different types of foundation and it's diagram ? **(10)**

b) Briefly explain soil structure interaction system in building? **(5)**

Q7 **a)** Write about beams and bending .Describe various types of beam & their behavior ? **(10)**

b) What do you mean by slab and their types? **(5)**

Q8 **a)** Differentiate between **(5+5)**
(i)LSM and WSM
(ii)pre stressed concrete and reinforced concrete.

b) What is column and beam? Describe the types of column? **(5)**

Q9 **a)** Write about steel structure and uses of steel in construction work ? **(10)**

b) Where steel frame structure are used. ?. **(5)**