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SRINIX COLLEGE OF ENGINEERING

1ST INTERNAL EXAMINATION-2017-18

Subject-AMOS

Semester-4TH

Branch-CIVIL

Full Mark-30

Time-1.30Hrs

ANSWER ALL QUESTIONS (PART-A)

[2X5]

(1) Give one examples of body force

(2) ----- is the example of plane stress

a. dam wall

b. deep beams

c. tunnel

d. thick cylinder

(3) Consider the following statements:

a. on a principal plane, only normal stress acts

b. on a principal plane, both normal and shear stress

c. on a principal plane, only shear stress

d. on a principal plane, only shear strain

(4) Write plane stress condition

a. $\sigma_x, \tau_{xy}, \tau_{xz}$

c. $\sigma_z, \sigma_y, \sigma_x,$

b. $\sigma_y, \tau_{yz}, \tau_{yx}$

d. $\sigma_z, \tau_{zx}, \tau_{zy}$

(5) Fill in the blanks for given 3D stress system

ANSWER ALL QUESTIONS (PART-B)

[2X5]

1. Classify theories of failure.
2. Which material gives best result for maximum principal stress theory?
3. Define stress tensor.
4. What is plane stress condition with examples?
5. Define stress invariant.

ANSWER ANY ONE QUESTION (PART-C)

[10X1]

1. The state of stress at a point is characterized by the components

$$\sigma_x = 12.31 \quad \sigma_y = 8.96 \quad \sigma_z = 4.34 \quad \tau_{zy} = 5.27$$

$$\tau_{zy} = 0.84 \quad \tau_{xy} = 4.20$$

Find the values of the principal stresses and their directions.

OR

2. Explain the theories of failure with graphical representation.