

Code No: R1621354

R16**SET - 1**

II B. Tech I Semester Regular/Supplementary Examinations, October/November - 2018
PROPERTIES AND STRENGTH OF MATERIALS
(Agricultural Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**

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**PART -A**

- |       |                                                                                 |    |
|-------|---------------------------------------------------------------------------------|----|
| 1. a) | What are the important properties of good building stone?                       | 2M |
| b)    | Differentiate between paints and varnishes                                      | 2M |
| c)    | Define seasoning of timber .Why is it necessary?                                | 3M |
| d)    | Find the deflection between of a simply supported beam with central point load. | 3M |
| e)    | What are the limitations of Euler's formula?                                    | 2M |
| f)    | Explain Claypeyorn's theorem of three moments                                   | 2M |

**PART -B**

- |       |                                                                                                                      |     |
|-------|----------------------------------------------------------------------------------------------------------------------|-----|
| 2. a) | Discuss the classifications of rocks.                                                                                | 7M  |
| b)    | Describe the properties, varieties and uses of cement mortar                                                         | 7M  |
| 3. a) | What do you understand by alloys of copper? Mention the properties and discuss their use in agricultural activities. | 8M  |
| b)    | Describe the properties of distemper and bring out its uses in buildings.                                            | 6M  |
| 4. a) | Discuss the methods of heat treatment of steel.                                                                      | 7M  |
| b)    | Draw the cross section of tree and name its various parts.                                                           | 7M  |
| 5.    | Derive the relation between E,C,K.                                                                                   | 14M |
| 6.    | Derive an expression for buckling of a column when both ends are fixed.                                              | 14M |
| 7. a) | What are the different types of welded joints? How to calculate the strength of welded joint?                        | 10M |
| b)    | What is super position theorem?                                                                                      | 4M  |