

Printing Pages : 1

Paper Code : MSE-213

(B) (SVSU:2

ENROLLMENT NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

M.TECH. (SE)

1st YEAR, 2nd SEMESTER EXAMINATION
DESIGN OF HIGH RISE STRUCTURE

[Time: 3:00 Hrs.

Max. Marks:70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS

QUESTION NO.-1: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Discuss the role of High rise structures in civil engineering in detail.
b)	Enumerate the various types high rise structures in detail.
c)	Describe the various types of Bracing Systems in detail.

QUESTION NO.-2: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Discuss the various factors influencing fire resistance system in detail.
b)	Explain the Utility of High Rise Structure in Civil Engg.
c)	Discuss the overall foundation design process in detail.

QUESTION NO.-3: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Discuss the main requirements for structural safety of buildings during ground motion?.
b)	Elaborate the various challenges in the design of the high rise building in detail.
c)	What is Energy pile? Explain the important factors that influence the efficiency of energy piles in detail.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Explain the different types of loads considered in design of high rise buildings in detail..
b)	Explain the various consideration for Geometry Design of Transmission Towers in detail
c)	What do you understand by the term Dynamic approach. Explain various types of approaches used in design of tall structures.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Explain principles of design of automatic sprinklers system of fire resistance in detail.
b)	Discuss the difference in mast, towers, chimneys in detail.
c)	Discuss the different types of foundations are typically used for high-rise buildings in detail

Printing Pages : 1

Paper Code : MSE-201

(B) (SVSU:2022-2023/R)

ENROLLMENT NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

M.TECH. (SE)

1st YEAR, 2nd SEMESTER EXAMINATION
FEM IN STRUCTURAL ENGINEERING

[Time: 3:00 Hrs.]

Max. Marks:70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS

QUESTION NO.-1: ATTEMPT ANY FOUR PARTS.

(4*3=12)

a)	Describe patch test and mention its importance.
b)	Explain different plate bending theories with elements used for each.
c)	Explain the concept of isoparametric formulation with the help of a 2-noded line element.
d)	Derive the stiffness matrix for skew plate.
e)	Explain principle of minimum potential energy.
f)	Explain the Hermit Shape Functions.

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

a)	Explain steps in Gauss elimination solution procedure.
b)	Discuss role of shape functions, their significance and properties in FEM.
c)	Explain how displacement boundary conditions are specified in FEA.
d)	What gives CST and LST elements their name?

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

a)	Mention the basic steps of Rayleigh-Ritz method
b)	What are shape functions and what are their properties?
c)	State the conditions to be satisfied in order to use axisymmetric elements
d)	Define Isoparametric elements with suitable examples

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Derive 2-noded beam element and 3-noded bar element using interpolation functions.
b)	What is Degenerated Shell? Formulate Finite Element equation of Degenerated Shell.
c)	Derive the force-displacement relationship for Buckling of Beam-Column Members.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Write down the expression for the stress-strain relationship matrix for a CST element.
b)	Derive the element stiffness matrix for spring element.
c)	Derive the shape function for 4 noded isoparametric element.

Printing Pages : 1

Paper Code : MSE-202

(A) (SVSU:2022-2023/R)

ENROLLMENT NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

M.TECH. (SE)
1st YEAR, 2nd SEMESTER EXAMINATION
STRUCTURAL DYNAMICS

[Time: 3:00 Hrs.]

Max. Marks:70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS
CALCULATOR (MS-100) IS ALLOWED.

QUESTION NO.-1: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) List out and explain different prescribed dynamic loadings with applications.
- b) Discuss force-displacement relation for linearly elastic and inelastic systems
- c) Write a note on Influence line diagram.

QUESTION NO.-2: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Enumerate various type of loads consider in structure design
- b) Discuss the term Normal co-ordinates.
- c) What do you mean by Dynamic Response?

QUESTION NO.-3: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Explain the principal of base isolation method.
- b) What is the degree of freedom? Explain different types with example.
- c) Discuss the dynamic effect of wind load on the structure.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Derive the formula of multi degree of freedom of motion.
- b) Explain Normalization of modes and weighted modes.
- c) Explain the term structure dynamics .

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

- a) Explain the Newton's law of motion.
- b) **What you mean by** Vibration Analysis? **Discuss the importance of** Vibration Analysis.
- c) Differentiate two degree and multiple degree of freedom system.

12/05/23

Printing Pages : 1

Paper Code : MSE-222

(B) (SVSU:2022-2023/R)

ENROLLMENT NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

M.TECH. (SE)

1st YEAR, 2nd SEMESTER EXAMINATION

ADVANCED DESIGN OF FOUNDATION

[Time: 3:00 Hrs.]

Max. Marks:70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS
CALCULATOR (MS-100) IS ALLOWED.

QUESTION NO.-1: ATTEMPT ANY FOUR PARTS.

(4*3=12)

a)	What are the different types of shallow foundation? Explain with the help of sketches.
b)	What do you understand by the grip length? What is its importance in well foundations?
c)	Describe the method of calculating the stress at a point below the corner of a rectangular load.
d)	What do you understand by contact pressure? What are the factors that affect the contact pressure distributions?
e)	Briefly explain the Barken method of machine foundation design.
f)	Explain the natural frequency, resonance and magnificence.

QUESTION NO.-2: ATTEMPT ANY THREE PARTS.

(3*4=12)

a)	What is dynamic formula discuss it and write their limitations.
b)	The load carrying capacity of tension piles depends upon the diameter of the bell explain this statement
c)	Explain with the help of diagram the different types of failure.
d)	What do you understand by soil stabilization?

QUESTION NO.-3: ATTEMPT ANY THREE PARTS.

(3*6=18)

a)	Why signals are required and what are types of signals used in system
b)	What is meant by vibration isolation? How is it done?.
c)	Discuss the situations where a well foundation is more suitable than the other types of foundations.
d)	Explain with the help of diagram the differences between general and local shear failure.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	The infinite line load has an intensity of 600KN/m. Determine the vertical stress at a point P which has x and z coordinates as 5m and 4 m respectively.
b)	The load carrying capacity of tension piles depends upon the diameter of the bell explain this statement
c)	How would you determine the stress at appoint due to strip load and circular load. Compare the zones of influence due to the two types of loads.

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Discuss the method for the design of tension piles and inclined piles.
b)	Discuss the situation where a well foundation is more suitable than the other types of foundations.
c)	Discuss the under reamed piles and its installation with the help of diagram

18/05/23

Printing Pages : 1

Paper Code : METC-211

(A) (SVSU:2022-2023/R)

ENROLLMENT NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

M.TECH. (SE)

**1st YEAR, 2nd SEMESTER EXAMINATION
ENGLISH FOR RESEARCH PAPER WRITING**

[Time: 3:00 Hrs.]

Max. Marks:70]

NOTE:- ATTEMPT ALL THE QUESTIONS AS PER GIVEN INSTRUCTIONS**QUESTION NO.-1: ATTEMPT ANY TWO PARTS.**

(2*7=14)

a)	Define "Title" in a research paper. Elaborate on the language skills required to make it effective.
b)	'Concise or complex' how to plan and prepare for a well drafted research paper?
c)	Explain Ambiguity and Vagueness.

QUESTION NO.-2: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Define what skills are needed when writing the Discussion.
b)	A complex or lengthy sentence with too many details leads to confusion due to ambiguity'.
c)	What is the need for avoiding Plagiarism?

QUESTION NO.-3: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Write shorts notes on the following: I. Reports, II. Full paper
b)	How to draft a well-organized research paper? Discuss the details of structuring and grammar in research work.
c)	How important is introduction in research paper? Elucidate on the skills required make it effective.

QUESTION NO.-4: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	Discuss the importance of abstract. Write in detail about the steps to be followed to ensure a grammatically correct research abstract.
b)	What is readability? How to ensure readability of a research work till the end?
c)	How to quote information from a source in a research paper? What is paraphrasing? How to use it?

QUESTION NO.-5: ATTEMPT ANY TWO PARTS.

(2*7=14)

a)	'Ambiguity mars Accuracy and Redundancy mars Relevance'. How true is this statement in the context of research? Discuss
b)	English language plays a crucial role in ensuring the quality of research work'. Explain
c)	Explain in detail how literature review reflects the progress of continuous work.
