



Sri Indu Institute of Engineering & Technology

Recognized Under 2(f) of UGC Act 1956

Approved by AICTE, New Delhi
Affiliated to JNTUH, Hyderabad.

1.1.3. Setting of question papers for UG/PG programs

SUMMARY REPORT

A.Y: 2019-2020

S No	Name of the faculty	Course name	Year/ Semester	Date	Institute/University
1	Dr.I.Satyanarayana	Operations Research	III/I	27.8.2019	Sri Indu College of Engg. & Tech.

A.Y: 2018-2019

S No	Name of the faculty	Course name	Year/ Semester	Date	Institute/University
1	Dr.I.Satyanarayana	Engineering Graphics	I/I	04.02.2019	Sri Indu College of Engg. & Tech.

A.Y: 2017-2018

S No	Name of the faculty	Course name	Year/ Semester	Date	Institute/University
1	Dr.I.Satyanarayana	Operations Research	IV/I	16.10.2017	Sri Indu College of Engg. & Tech.

A.Y: 2016-2017

S No	Name of the faculty	Course name	Year/ Semester	Date	Institute/University
1	Dr.I.Satyanarayana	Engineering Drawing	I/I	19.03.2016	JNTUH University
2	Dr.I.Satyanarayana	Refrigeration	M.Tech – I Sem	21.07.2016	JNTUH University
3	Dr.I.Satyanarayana	Thermal & Nuclear Power Plants	M.Tech – I Sem	06.06.2016	JNTUH University
4	Dr.I.Satyanarayana	Precision Engineering	M.Tech –II Sem	08.06.2016	JNTUH University

Main Road, Sheriguda, Ibrahimpatnam, R.R. Dist. 501 510.

Campus Ph: 9640590999, 9347187999, 8096951507.

PRINCIPAL
Sri Indu Institute of Engineering & Technology
Sheriguda(V), Ibrahimpatnam(M).
Dist. Telangana - 501 510
<https://siiet.ac.in>

A.Y: 2015-2016

S No	Name of the faculty	Course name	Year/ Semester	Date	Institute/University
1	Dr.I.Satyanarayana	Thermal & Nuclear Power Plants	M.Tech – I Sem	23.12.2015	JNTUH University


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R.R. Dist. Telangana -501 511

**Letters from the From the Affiliating University to the
Faculty member for Setting Question Paper**

Tech.
M).
a



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

Recognized under 2(i) and 12(B) of UGC Act 1956

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Sheriguda (V), Ibrahimpatnam, R.R. Dist, Hyderabad - 501 510

D4

BR-14

Invitation , Instructions & Guidelines to Paper-Setter

Lr.No.SICET/AUTO/DAE/QP/BR- 14/287/2019

Date:27.08.2019

From

Principal,

Sri Indu College of Engineering and Technology,

Sheriguda (Village), Ibrahimpatnam (Mandal), R.R. District - 501 510

To

Dr. I.Satyanarayana,

Principal

SIIT (RVR), Sheriguda,

Ibrahimpatnam - 501510

Ph.No. 9502997013, ismmechprofessor@gmail.com

Dear Sir/Madam,

I am desired to invite you to act as paper setter in the **SUBJECT : OPERATIONS RESEARCH**.
Subject Code: R14MTH1106 for III B.Tech - I Semester.

You are requested to comply with the following **Instructions and Guidelines** while setting the question papers and in discharging their duties.

The question papers must be sent to the e-mail: sicet2012ae@gmail.com

- Paper-setters shall prepare **TWO** set(s) as per the syllabus enclosed.
- The Paper-setter shall strictly adhere to the syllabus and the model paper enclosed.
- The Maximum marks for the question paper is **70 Marks** and the duration of the examination is **3 hrs**.
- The Question paper will have Section - A and Section - B. The candidate has to answer all questions in Section - A and **FIVE** questions in Section - B, choosing at least one question from each Unit
- The paper setters shall note that the **Section - A** is compulsory. It should contain **Five** short answer questions (five questions carries 4 marks each **covering all five Units of the syllabus**. Thus Section - A carries altogether **20 marks**. The questions are to be set in such a way that they should be specific and require a maximum of 4 to 5 line answers only.
- The remaining Five questions, namely question no:6 to 15 in **Section - B** (may contain preferably two or more parts) **should cover entire syllabus of all five units** framed from prescribed text books. These questions have a weightage of **TEN marks** each. The questions should be set without any ambiguity.
- The paper setter shall indicate clearly the marks allotted to each part of the question and level of bloom's taxonomy .
- The paper setter shall draw the **Figures/Drawings/Circuit diagrams** wherever necessary and label the diagrams, clearly and properly.
- The paper setter shall indicate clearly on the question paper, the need of any **code book or data sheet** required by the candidate for answering the questions.
- The paper setters shall ensure confidentiality regarding question papers and the contents therein.
- Bloom's Taxonomy** : As per AICTE norms , all the Paper setters are requested to follow the directions given in the Bloom's Taxonomy approved by AICTE . The following table gives an idea of percentage to be allotted to different questions relating to understanding, applying , evaluating etc .
- Levels of Bloom's taxonomy:**

Level-1	- Recall (Remembering)	-- Fundamental Knowledge	- 60%
Level-2	- Understanding		
Level-3	- Applying	-- Knowledge on Application & Analysis	- 30%
Level-4	- Analysing		
Level-5	- Evaluating	-- Critical Thinking	- 10%
Level-6	- Creating		

- Revised Bloom's Taxonomy action verb sheet attached as annexure

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Attention of the paper setters is specifically drawn to the following instructions.

- The question papers are to be planned in such a way that a candidate of certain ability with good preparation can reasonably be expected to answer the required number of questions within the time frame of 3 hours allotted.
- Every question set shall be clear and definite in language and meaning.
- The questions shall be fairly distributed over the whole course of study prescribed for the examination and **not concentrated on any one unit or a few units only**. All questions must uniformly be covered all the five units of the syllabus.
- Special care must be taken while writing mathematical signs and indexing figures.
- There should be continuous page numbers marked on the question paper.
- Please send the soft copy of the Question Papers to sicet2012ae@gmail.com and deliver the hard copy by mentioning the subject name and code number on the covers in person or send them in sealed envelope provided herewith by Registered Post to the following address within one week from the date of receipt of this letter.

Prof. P Mallesham, Principal, Sri Indu College of Engineering & Technology, Sheriguda (Village), Ibrahimpatnam, R.R. District – 501510.

You are requested to seal the question paper first in the inner envelopes and put the inner envelopes in the outer envelope which should again be sealed.

The honorarium for setting of question paper of 3 hours duration is at the rate of Rs. 1000/-per set. In addition to the honorarium, an additional amount of Rs 200/- will be paid to the Paper Setter towards typing, printing, handling and postal charges.

I request you to kindly accept this invitation and communicate your acceptance.

Your appointment as examiner should be kept STRICTLY CONFIDENTIAL.

The following papers are enclosed:

- The Syllabus prescribed for the papers(Kindly send the syllabus back along with QPs)
- Model Question Paper (Kindly send the Model QP back along with QPs)
- QP_Template
- Remuneration bill for paper setting
- Revised Bloom's Taxonomy action verb sheet
- Two inner envelopes & one outer envelope.

Note:

- a) If any relative of the examiner is appearing in the paper to be set by him/her, he/she is requested to communicate the fact to the Principal immediately so that alternative arrangements may be made.
- b) If any examiner is coaching the students privately for the examinations for which he/she is asked to act as Examiner, he/she is requested to intimate the fact to the Principal immediately, so that alternative arrangements may be made.
- c) **Kindly note that we are also dispatching the hard copy of this invitation along with all the forms and envelopes. You are requested to send the hard copies of the question papers after you receive these covers, since our college has become Autonomous, we require both hard and soft copies of the question papers. The envelopes may please be sealed with your attestation signature.**

Sd/-
Principal

IMPORTANT TELEPHONE NUMBERS and e-MAIL TO CONTACT

Prof. Shivakumar (Dean) / Dr. Bala Subramanyam (Controller of Examinations)
email: sicet2012ae@gmail.com Phone: 9346643459


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REMUNERATION BILL FOR END EXAMS PAPER SETTING

Name of the Subject Expert			
Designation and Address			
Name of the Bank		Branch:	
Bank Account No:		IFSC code:	
Email id :		Cell No.	

I am sorry that I cannot give my acceptance to set the paper as one of my relatives is taking the examination for which the paper setting is sought

OR

S. No.	Subject Name	Subject Code	No. of Question Papers Set	Amount(Rs) @ Rs.1000/- Per Set
			Set-I	1000
			Set-II	1000
Handling and postal charges per subject		200-00	x 1	200
(Rupees _____ only)			Total:	Rs. 2200

DECLARATION

I _____ certify that

- I do not have any relative taking the examination.
- Any amount claimed in the bill held under objection by audit or over payment if any noticed should be refunded by me.
- Complete confidentiality is maintained and that all drafts, notes, etc., of the questions set by me will be destroyed after receiving the acknowledgment from the college autonomous section.
- The question paper set by me is in accordance with the prescribed syllabus sent by you.
- The questions set are generally distributed over the entire syllabus.
- No question which is beyond the prescribed syllabus.
- Indicate the percentage for each of the following criteria from the questions framed.
- Fundamental knowledge from Level 1 & 2 of bloom's taxonomy : _____%
- Knowledge on application and analysis from Level 3 & 4 of bloom's taxonomy: _____%
- Critical thinking and ability to design from Level 5 & 6 of bloom's taxonomy: _____%

Signature of the Subject Expert.

-----For Office Use-----

Passed for Rs.(Rupees.....Only)

VERIFIED BY: ACE

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(Kindly post a hard copy of the Remuneration bill to the Principal)


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Code No: TYPE SUBJECT CODE HERE

Set No. TYPE SET No. HERE

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PLEASE TYPE EXAMINATIONS NAME HERE

PLEASE TYPE SUBJECT NAME HERE

Duration: 3 Hrs

Max Marks:

70M

Section – A

Answer All the following questions

Marks: 5Qx4M = 20M

1. Question from Unit –I only (4M)
2. Question from Unit –II only (4M)
3. Question from Unit –III only (4M)
4. Question from Unit –IV only (4M)
5. Question from Unit –V only (4M)

Section – B

Answer any FIVE questions choosing at least one from each Unit

Marks: 5Qx10M = 50M

UNIT - I

6. Question from Unit-I only ()
(OR)
7. Question from Unit-I Only ()

UNIT - II

8. Question from Unit-II Only ()
(OR)
9. Question from Unit-II only ()

UNIT - III

10. Question from Unit-III only ()
(OR)
11. Question from Unit-III only ()

UNIT - IV

12. Question from Unit-IV only ()
(OR)
13. Question from Unit-IV only ()

UNIT-V

14. Question from Unit-V only ()
15. Question from Unit-V only ()


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REVISED Bloom's Taxonomy Action Verbs

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	<ul style="list-style-type: none"> • Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why 	<ul style="list-style-type: none"> • Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate 	<ul style="list-style-type: none"> • Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize 	<ul style="list-style-type: none"> • Analyze • Assume • Categorize • Classify • Compare • Conclusion • Contrast • Discover • Dissect • Distinguish • Divide • Examine • Function • Inference • Inspect • List • Motive • Relationships • Simplify • Survey • Take part in • Test for • Theme 	<ul style="list-style-type: none"> • Agree • Appraise • Assess • Award • Choose • Compare • Conclude • Criteria • Criticize • Decide • Deduct • Defend • Determine • Disprove • Estimate • Evaluate • Explain • Importance • Influence • Interpret • Judge • Justify • Mark • Measure • Opinion • Perceive • Prioritize • Prove • Rate • Recommend • Rule on • Select • Support • Value 	<ul style="list-style-type: none"> • Adapt • Build • Change • Choose • Combine • Compile • Compose • Construct • Create • Delete • Design • Develop • Discuss • Elaborate • Estimate • Formulate • Happen • Imagine • Improve • Invent • Make up • Maximize • Minimize • Modify • Original • Originate • Plan • Predict • Propose • Solution • Solve • Suppose • Test • Theory

Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing, Abridged Edition. Boston, MA: Allyn and Bacon.

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III B.Tech - I Semester –End Examinations (Regular)

Subject Name : OPERATIONS RESEARCH

Branch: CSE

Duration: 3 Hrs

Max Marks: 70M

SECTION-A

Note: Answer All the following questions

Marks: 5x4=20M

1. Explain the Simplex method algorithm to solve as LPP.
2. Explain the method of I) Least cost entry method
II) VAM.
3. a) Discuss the various types of sequencing problem.
b) Define group replacement.
4. Define the following terms
a) competitive game b) Principle of dominance c) Minimax _ Maxmin principle
5. Explain about MODEL-1 :(M/M/1/∞).

SECTION-B

Note: Answer any FIVE questions from the following
5x10=50M

Marks:

UNIT - I

- 6) Use two phase Simplex method to solve LPP
Max $Z = 5x_1 + 3x_2$
Subject to $2x_1 + x_2 \leq 1$
 $x_1 + 4x_2 \geq 6$
and $x_1, x_2 \geq 0$.

(OR)

- 7) Solve by Big-M Method
Max $Z = -2x_1 - x_2$
Subject to $3x_1 + x_2 = 3$
 $4x_1 + 3x_2 \geq 6$
 $x_1 + 2x_2 \leq 4$
and $x_1, x_2 \geq 0$.

UNIT II

- 8) Obtain optimal solution for the given Transportation problem by MODI method.

	D1	D2	D3	D4	Supply
S1	11	22	6	5	75
S2	16	31	14	15	60
S3	5	21	4	9	40
S4	30	65	55	25	
Demand					


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(OR)

9) Solve the following travelling salesmen problem.

	A	B	C	D
A	-	46	16	40
B	41	-	50	40
C	82	32	-	60
D	40	40	36	-

UNIT – III

10) Determine the optimal sequence of jobs and also find the total elapsed time.

	A	B	C	D	E	F	G
Machine-I	3	8	7	4	9	8	7
Machine-II	4	3	2	5	1	4	3
Machine-III	6	7	5	11	5	6	12

(OR)

A computer contains 10,000 resistors. When any one of the resistors fails, it is replaced. The cost of replacing a single resistor is Rs.10 only. If all the resistors are replaced at the same time. The cost per resistor would be reduced to Rs.3.50. the percent surviving by the end of the month 't' is as following what is the optimum plan?

Month(t)	0	1	2	3	4	5	6
%surviving by end of month	100	97	90	70	30	15	0

UNIT – IV

11) Solve the game whose payoff matrix is give by

a) b)

-2	0	0	5	3
3	2	1	2	2
-4	-3	0	-2	6
5	3	-4	2	-6

1	3	1
0	-4	-3
1	5	-1

(OR)

12) The manufacturer has to supply 12000 units of a product per year to his customer. The ordering cost is Rs.100 per order and the carrying cost is Rs 0.80 per item per month.

The shortage cost is not allowed and the replacement is instantaneous. Determine

- The Economic Order Quantity.
- The time between the orders
- The no. of orders per year.


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- d) Min.total expected annual cost.
- e) The optimum total cost.


UNIT – V

13) A TV repair man finds that the time spent on repairing has an exponential distribution with mean 30 min per unit. The arrival of TV sets is poisson with an average of 10 sets per day of 8 hours .what is his expected idle time per day? How many sets are there on the average?

(OR)

14) The automobile company manufactures around 150 scooters.The daily production varies from 146 to 154 depending upon the availability of raw materials an other working conditions

Production (per day)	146	147	148	149	150	151	152	153	154
probability	0.04	0.09	0.12	0.14	0.11	0.10	0.20	0.12	0.08


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B.Tech. - III Year - I Semester

L	T/P/D	C
4	-/-/-	4

**(R14MTH1106) OPERATIONS RESEARCH
(OPEN ELECTIVE)****UNIT - I**

Development - Definition- Characteristics and Phases - Types of models - Operations Research models - applications.

Allocation: Linear Programming Problem Formulation - Graphical solution

- Simplex method - Artificial variables techniques: Two-phase method, Big-M method.

UNIT - II

Transportation Problem - Formulation - Optimal solution, unbalanced transportation problem - Degeneracy.

Assignment problem - Formulation - Optimal solution - Variants of Assignment Problem- Traveling Salesman problem.

UNIT - III

Sequencing - Introduction - Flow -Shop sequencing - n jobs through two machines - n jobs through three machines - Job shop sequencing - two jobs through 'm' machines

Replacement: Introduction - Replacement of items that deteriorate with time - when money value is not counted and When money value is counted - Replacement of items that fail completely- Group Replacement.

UNIT - IV

Theory of Games: Introduction -Terminology- Solution of games with saddle points and without saddle points- 2×2 games - dominance principle - $m \times 2$ & $2 \times n$ games -graphical method.

Inventory: Introduction - Single item, Deterministic models - Purchase inventory models with one price break and multiple price breaks -Stochastic models - demand may be discrete variable or continuous variable - Single Period model and no setup cost.

UNIT - V

Waiting Lines: Introduction - Terminology-Single Channel - Poisson arrivals and Exponential Service times - with infinite population and finite population models- Multichannel - Poisson arrivals and exponential service times with infinite population.

DYNAMIC Programming: Introduction - Terminology- Bellman's Principle of Optimality - Applications of dynamic programming- shortest path problem - linear programming problem.


Simulation: Introduction, Definition, types of simulation models, Steps involved in the simulation process- Advantages and disadvantages-applications of simulation to queuing and inventory.

TEXT BOOK :

1. Operations Research /J.K.Sharma 4e. /MacMilan
2. Introduction to O.R/Hillier & Libermann/TMH

REFERENCE BOOKS :

1. Introduction to O.R /Taha/PHI
2. Operations Research/ NVS Raju/ SMS Education/3rd Revised Edition
3. Operations Research /A.M.Natarajan, P.Balasubramanian, A. Tamilarasi/Pearson Education.
4. Operations Research / Wagner/ PHI Publications.
5. Operations Research/M.V. Durga Prasad, K. Vijaya Kumar Reddy, J. Suresh Kumar/ Cengage Learning.



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Lr.No.SICET/AUTO/DAE/QP/BR-18/26/2019

Date:04.02.2019

From
Principal,
Sri Indu College of Engineering and Technology,
Sheriguda (Village)
Ibrahimpatnam (Mandal),
R.R. District - 501 510

TO,
Dr./Prof. I .Satyanarayana
Professor, Dept. of MECH.,
SIIT (RVR), Sheriguda,
Ibrahimpatnam - 501510
Ph.No. 9502997013
Mail: isnmechprofessor@gmail.com

Dear Sir/Madam,

I am desired to invite you to act as paper setter in the **SUBJECT : ENGINEERING GRAPHICS**

Subject Code : R18MED1102 for I B.Tech I Semester.

You are requested to set Two sets of question papers (figures If any, have to be neatly drawn preferably with black pen). Please find in the attachment Bloom's Taxonomy way of questioning and follow the same for setting of question paper.

Please send the soft copy of the Question Papers to sicet2012ae@gmail.com and deliver the hard copy by mentioning the subject name and code number on the covers in person or send them in sealed envelope provided herewith by Registered Post to the following address within one week from the date of receipt of this letter.

As our college is Autonomous, it has become obligatory to collect this soft copy of the question paper as per JNTUH norms. Hence we request you to attach soft copies only to sicet2012ae@gmail.com.

Prof. P Mallesham, Principal, Sri Indu College of Engineering & Technology, Sheriguda (Village), Ibrahimpatnam, R.R. District - 501510.

You are requested to seal the question paper first in the inner envelopes and put the inner envelopes in the outer envelope which should again be sealed.

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I request you to kindly accept this invitation. Please communicate your acceptance.

Your appointment as examiner should be kept **STRICTLY CONFIDENTIAL**.

The following papers are enclosed:

- Forms for setting the papers
- The Syllabus prescribed for the papers(Kindly send the syllabus back along with QPs)
- Model Question Paper (Kindly send the Model QP back along with QPs)
- Remuneration bill for paper setting
- Two inner envelopes & one outer envelope.

Yours faithfully,

Principal

Note:

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- For any queries please contact on number:9346643459.



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REMUNERATION BILL FOR END EXAMS PAPER SETTING

Name of the Subject Expert			
Designation and Address			
Name of the Bank & Branch:			
Bank Account No:			
RTGS / IFSC Code:			
Email id :		Cell No.	

I am sorry that I cannot give my acceptance to set the paper as one of my relatives is taking the examination for which the paper setting is sought.

OR

S. No.	Subject Name	Subject Code	No. of Question Papers Set	Amount(Rs) @ Rs.1000/- Per Set
			Set-I	1000
			Set-II	1000
	Handling and postal charges per subject	200-00	x 1	200
(Rupees _____ only			Total :	Rs. 2200

Date:

Signature of the Subject Expert

DECLARATION

I _____ certify that

- I do not have any relative taking the examination.
- Any amount claimed in the bill held under objection by audit or over payment if any noticed should be refunded by me.
- Complete confidentiality is maintained and that all drafts, notes, etc., of the questions set by me will be destroyed after receiving the acknowledgment from the college autonomous section.
- The question paper set by me is in accordance with the prescribed syllabus sent by you.
- The questions set are generally distributed over the entire syllabus.
- No question which is beyond the prescribed syllabus.

Signature of the Subject Expert.

-----For Office Use-----

Passed for Rs.(Rupees.....Only)

VERIFIED BY: ACE

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(Kindly post a hard copy of the Remuneration bill to the Principal)

Time: 3 hours

Max. Marks: 70

PART-A

Answer the following questions:

5 X 4 = 20

1. Construct a regular pentagon of side 30mm by using inscribe circle method.
2. Write the difference between 1st angle projection and 3rd angle projection?
3. What is a solid? Classify the types of solids with examples?
4. What is the need of development of surfaces? Classify the methods of development?
5. Define the terms: 1) Isometric projection 2) Isometric Scale 3) orthographic projection 4) Perspective view

PART-B

Answer any *five* questions of the following:

5 X 10 = 50

UNIT-I

1. Inscribe an ellipse in a parallelogram having sides 150mm and 100 mm long and an included angle of 120°.
- (or)
2. Construct a diagonal scale of R:F=1:32,00,000 to show kilometers and long enough to measure up to 400km. Show distances of 257km and 333km on your scale.

UNIT-II

3. The front view of a line, inclined at 30° to the VP is 65mm long. Draw the projections of the line, when it is parallel to and 40mm above the HP, its one end being 30mm in front of the VP.
- (or)
4. A semi circular plate of 80mm diameter has its straight edge in the VP and inclined at 60° to the HP, the surface of the plate makes an angle of 30° with the VP. Draw its projections.

UNIT-III

5. Draw the projection of a circle of 75mm diameter having the end A of the diameter AB in the H.P., The surface of the plate makes an angle of 30° to the H.P. and 60° to the V.P.
- (or)
6. A Pentagonal Pyramid, Base 30mm side and Axis 65mm long, has its base horizontal and an edge of the base parallel to the V.P. a Horizontal Section Plane cuts it at a distance of 25mm above the base. Draw its Front View and Section Top View.

UNIT-IV

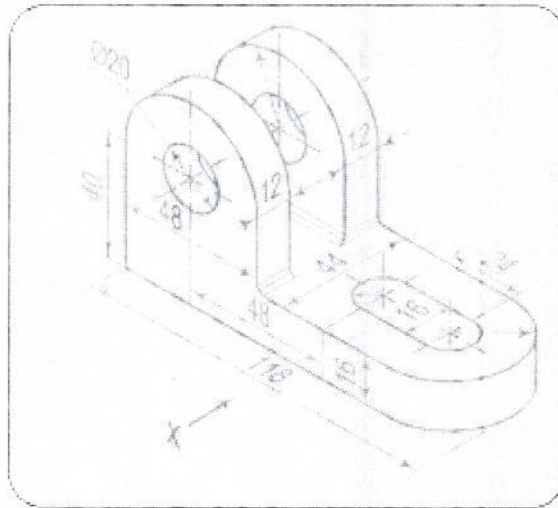
7. A vertical cylinder of 50mm diameter and 80 mm height rests with its base on HP. A square hole of 25mm side is made through it such that the axis of hole is parallel to H.P and perpendicular to VP. The faces of the square hole are equally inclined to HP and its axis bisects the axis of the cylinder. Develop the lateral surface of cylinder showing the true shape of the hole on it.

(or)

8. A cylinder of 60mm diameter and axis is 80mm long stands with its base on HP. It is completely penetrated by a horizontal cylinder of 40mm diameter and 80mm long such that their axes bisect each other at right angles. The axis of the penetrating cylinder is parallel to VP. Draw the projections showing curves of intersection.

UNIT-V

9. Draw the following views for the given figure
- FRONT VIEWS
 - TOP VIEWS
 - SIDE VIEWS



(or)

10. A rectangular pyramid, base 35 mm X 25 mm and axis 30mm long, is placed on the ground plane on its base, with the longer edge of the base parallel to and 40 mm behind the Picture Plane. The central plane is 35 mm to the left of the apex and the station point is 45 mm in front of the picture plane and 25 mm above the ground plane. Draw the perspective view of the pyramid.

Revised Bloom's Taxonomy – Question Starters

Remembering- Knowledge

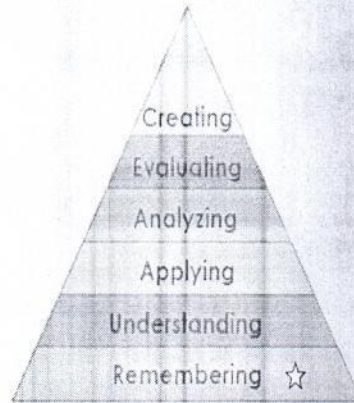
Recall or recognize information, and ideas

The teacher should:

- Present information about the subject to the student
- Ask questions that require the student to recall the information presented
- Provide verbal or written texts about the subject that can be answered by recalling the information the student has learned

Question prompts

What do you remember about _____ ?
How would you define _____ ?
How would you identify _____ ?
How would you recognize _____ ?
What would you choose _____ ?
Describe what happens when _____ ?
How is (are) _____ ?
Where is (are) _____ ?
Which one _____ ?
Who was _____ ?
Why did _____ ?
What is (are) _____ ?
When did _____ ?
How would you outline _____ ?
List the _____ in order.



Anderson & Krathwohl, 2001

Understanding-Comprehension

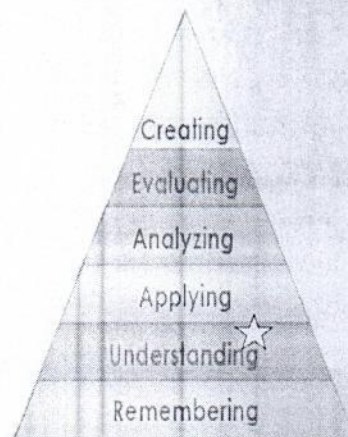
Understand the main idea of material heard, viewed, or read. Interpret or summarize the ideas in own words.

The teacher should:

- Ask questions that the student can answer in his/her own words by stating facts or by identifying the main idea.
- Give tests based on classroom instruction

Question prompts:

How would you compare _____ ? Contrast _____ ?
How would you clarify the meaning _____ ?
How would you differentiate between _____ ?
How would you generalize _____ ?
How would you express _____ ?
What can you infer from _____ ?
What did you observe _____ ?
How would you identify _____ ?
How can you describe _____ ?
Will you restate _____ ?
Elaborate on _____ .
What would happen if _____ ?
What is the main idea of _____ ?
What can you say about _____ ?



Anderson & Krathwohl, 2001

Applying-Application

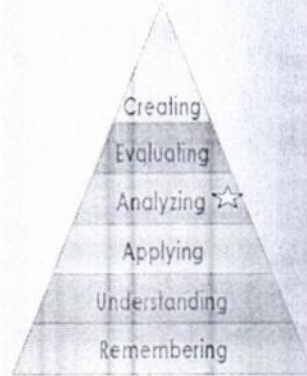
Apply an abstract idea in a concrete situation to solve a problem or relate it to prior experience

The teacher should:

- Provide opportunities for the student to use ideas, theories, or problem solving techniques and apply them to new situations.
- Review the student's work to ensure that he/she is using problem solving techniques independently.
- Provide questions that require the student to define and solve problems.

Questioning prompts:

- What actions would you take to perform _____?
- How would you develop _____ to present _____?
- What other way would you choose to _____?
- What would the result be if _____?
- How would you demonstrate _____?
- How would you present _____?
- How would you change _____?
- How would you modify _____?
- How could you develop _____?
- Why does _____ work?
- How would you alter _____ to _____?
- What examples can you find that _____?
- How would you solve _____?



Anderson & Krathwohl, 2001

Analyzing - Analysis

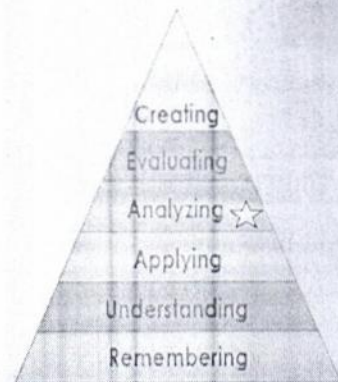
Break down a concept or idea into parts and show relationships among the parts.

The teacher should:

- Allow time for students to examine concepts and ideas and to break them down into basic parts.
- Require students to explain why they chose a certain problem solving technique and why the solution worked.

Questioning prompts:

- How can you classify _____ according to _____?
- How can you compare the different parts _____?
- What explanation do you have for _____?
- How is _____ connected to _____?
- Discuss the pros and cons of _____.
- How can you sort the parts _____?
- What is the analysis of _____?
- What can you infer _____?
- What ideas validate _____?
- How would you explain _____?
- What can you point out about _____?
- What is the problem with _____?
- Why do you think _____?



Anderson & Krathwohl, 2001

Evaluating- Evaluation

Make informed judgments about the value of ideas or materials. Use standards and criteria to support opinions and views.

The teacher should:

- Provide opportunities for students to make judgments based on appropriate criteria.
- Have students demonstrate that they can judge, critique, or interpret processes, materials, methods, etc. using standards and criteria.

Questioning prompts:

What criteria would you use to assess _____?

What data was used to evaluate _____?

What choice would you have made _____?

How would you determine the facts _____?

What is the most important _____?

What would you suggest _____?

How would you grade _____?

What is your opinion of _____?

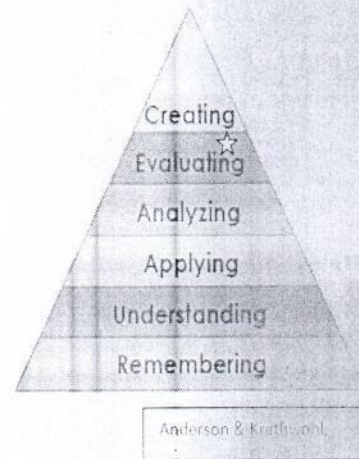
How could you verify _____?

What information would you use to prioritize _____?

Rate the _____.

Rank the importance of _____.

Determine the value of _____.



Creating-Synthesis

Bring together parts of knowledge to form a whole and build relationships for new situations.

The teacher should:

- Provide opportunities for students to assemble parts of knowledge into a whole using creative thinking and problem solving.
- Require students to demonstrate that they can combine concepts to build new ideas for new situations.

Questioning prompts:

What alternative would you suggest for _____?

What changes would you make to revise _____?

How would you explain the reason _____?

How would you generate a plan to _____?

What could you invent _____?

What facts can you gather _____?

Predict the outcome if _____.

What would happen if _____?

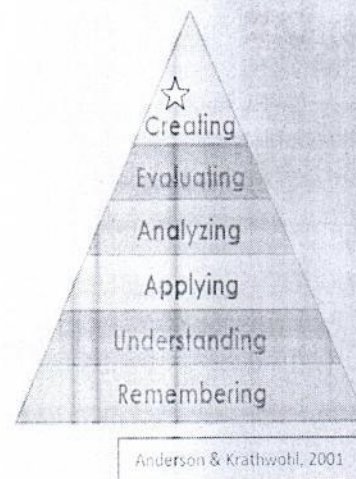
How would you portray _____?

Devise a way to _____.

How would you compile the facts for _____?

How would you elaborate on the reason _____?

How would you improve _____?



SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

B.Tech. - I Year - I Semester

L	T	P	C
1	0	4	3

(R18MED1102) ENGINEERING GRAPHICS

Course objectives:

- To provide basic concepts in engineering drawing.
- To impart knowledge about standard principles of orthographic projection of objects.
- To draw sectional views and pictorial views of solids.

Course Outcomes: At the end of the course, the student will be able to:

- Preparing working drawings to communicate the ideas and information.
- Read, understand and interpret engineering drawings.

UNIT - I

Introduction to Engineering Drawing: Principles of Engineering Graphics and their Significance, Conic Sections including the Rectangular Hyperbola – General method only, Cycloid, Epicycloid and Hypocycloid, Scales – Plain & Diagonal.

UNIT- II

Orthographic Projections: Principles of Orthographic Projections – Conventions – Projections of Points and Lines, Projections of Plane regular geometric figures.—Auxiliary Planes.

UNIT - III

Projections of Regular Solids – Auxiliary Views - Sections or Sectional views of Right Regular Solids – Prism, Cylinder, Pyramid, Cone – Auxiliary views – Sections of Sphere

UNIT - IV

Development of Surfaces of Right Regular Solids – Prism, Cylinder, Pyramid and Cone, Intersection of Solids: Intersection of – Prism vs Prism- Cylinder Vs Cylinder

UNIT - V

Isometric Projections: Principles of Isometric Projection – Isometric Scale – Isometric Views – Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projection of objects having non- isometric lines, Isometric Projection of Spherical Parts, Conversion of Isometric Views to Orthographic Views and Vice-versa – Conventions.

Introduction to the perspective views, their types & Perspective views of simple objects

Introduction to CAD:

Introduction to AUTOCAD Software Package Commands.- Creation of 2D Sketches by CAD Package

TEXTBOOKS:

- Engineering Drawing N.D. Bhatt / Charotar
- Engineering Drawing / N. S. Parthasarathy and Vela Murali/ Oxford

REFERENCE BOOKS:

- Engineering Drawing / Basant Agrawal and McGrawal/ McGraw Hill
- Engineering Drawing/ M. B. Shah, B.C. Rane / Pearson.
- Computer Aided Engineering Drawing – K Balaveera Reddy et al – CBS Publishers



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Sheriguda (V), Ibrahimpatnam, R.R. Dist, Hyderabad - 501 510

D4

BR-12

Lr.No.SICET/AUTO/DAE/QP/BR-12/293/2017

Date: 16.10.2017

From
Principal,
Sri Indu College of Engineering and Technology,
Sheriguda (Village)
Ibrahimpatnam (Mandal),
R.R. District – 501 510

To
Dr./Prof. I .Satyanarayana,
Dept. of MECH.,
SIIT (RVR), Sheriguda,
Ibrahimpatnam - 501510
Ph.No. 9502997013
Mail: isnmechprofessor@gmail.com

Dear Sir/Madam,

I am desired to invite you to act as paper setter in the **SUBJECT: OPERATIONS RESEARCH**
Subject Code: R12MTH1106 for IVB.TECH I SEM. BRANCH: MECHANICAL ENGINEERING.
You are requested to set Two sets of question papers (figures If any, have to be neatly drawn preferably with black pen).

Please send the soft copy of the Question Papers to sicet2012ae@gmail.com and deliver the hard copy by mentioning the subject name and code number on the covers in person or send them in sealed envelope provided herewith by Registered Post to the following address within one week from the date of receipt of this letter.

As our college is Autonomous, it has become obligatory to collect this soft copy of the question paper as per JNTUH norms. Hence we request you to attach soft copies only to sicet2012ae@gmail.com.

Prof. P Mallesham, Principal, Sri Indu College of Engineering & Technology,
Sheriguda (Village), Ibrahimpatnam, R.R. District - 501510.

You are requested to seal the question paper first in the inner envelopes and put the inner envelopes in the outer envelope which should again be sealed.

The honorarium for setting of question paper of 3 hours duration is at the rate of Rs. 1000/-per set. In addition to the honorarium, an additional amount of Rs 200/- will be paid to the Paper Setter towards typing, computer printout, handling and postal charges.

I request you to kindly accept this invitation. Please communicate your acceptance.

Your appointment as examiner should be kept **STRICTLY CONFIDENTIAL**.

The following papers are enclosed:

- Forms for setting the papers
- The Syllabus prescribed for the papers(Kindly send the syllabus back along with QPs)
- Model Question Paper (Kindly send the Model QP back along with QPs)
- Remuneration bill for paper setting
- Two inner envelopes & one outer envelope.


Yours faithfully,

Principal

Note:

- If any relative of the examiner is appearing in the paper to be set by him/her, he/she is requested to communicate the fact to the Principal immediately so that alternative arrangements may be made.
- If any examiner is coaching the students privately for the examinations for which he/she is asked to act as Examiner, he/she is requested to intimate the fact to the Principal immediately, so that alternative arrangements may be made.
- Kindly note that we are also dispatching the hard copy of this invitation along with all the forms and envelopes. You are requested to send the hard copies of the question papers after you receive these covers, since our college has become Autonomous, we require both hard and soft copies of the question papers. The envelopes may please be sealed with your attestation signature.

---oOo---


PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(M),
Dist. Telangana -501 510



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D4

REMUNERATION BILL FOR END EXAMS PAPER SETTING

Name of the Subject Expert			
Designation and Address			
Name of the Bank & Branch:			
Bank Account No:			
RTGS / IFSC Code:			
Email id :		Cell No.	

I am sorry that I cannot give my acceptance to set the paper as one of my relatives is taking the examination for which the paper setting is sought.

OR

S. No.	Subject Name	Subject Code	No. of Question Papers Set	Amount(Rs) @ Rs.1000/- Per Set
			Set-I	1000
			Set-II	1000
	Handling and postal charges per subject	200-00	x 1	200
(Rupees _____ only			Total :	Rs. 2200

Date:

Signature of the Subject Expert

DECLARATION

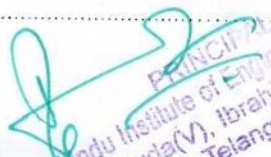
I _____ certify that

- I do not have any relative taking the examination.
- Any amount claimed in the bill held under objection by audit or over payment if any noticed should be refunded by me.
- Complete confidentiality is maintained and that all drafts, notes, etc., of the questions set by me will be destroyed after receiving the acknowledgment from the college autonomous section.
- The question paper set by me is in accordance with the prescribed syllabus sent by you.
- The questions set are generally distributed over the entire syllabus.
- No question which is beyond the prescribed syllabus.

Signature of the Subject Expert.

-----For Office Use-----

Passed for Rs.(RupeesOnly)


 PRINCIPAL
 Sri Indu Institute of Engineering & Tech.
 Sheriguda(V), Ibrahimpatnam(RR),
 R.R. Dist. Telangana -501 510

BR-12

MODEL QUESTION PAPER

D4

Subject Code No: R12MTH1106

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous Institution under UGC, New Delhi)

Recognized under 2(f) and 12(B) of UGC Act 1956

IV B.Tech – I Semester –End Examination (Regular)

OPERATIONS RESEARCH

Duration: 3 Hrs

Max Marks:

70M

Section – A

Answer All the following questions

Marks: 5x4 =

20M

1. Define slack and surplus variable
2. What is assignment problem
3. fine group replacement.
4. Define saddle point.
5. What is queue length?

Section – B

Answer any FIVE of the following questions

Marks: 5x10 =

50M

- 6.Explain the Simplex method algorithm to solve as LPP
- 7.Obtain optimal solution for the given Transportation problem by MODI method.

	D1	D2	D3	D4	Supply	
	11	22	6	5	75	S1
	16	31	14	15	60	S2
	5	21	4	9	40	
	30	65	55	25		S3

Demand

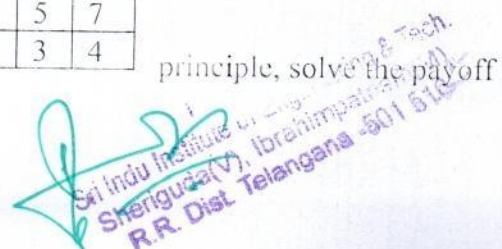
8.A book binder has one printing press, one binding machine and manuscripts of five different books, the time require to perform the printing and binding operations for each book are know. Determine the order in which book should be processed in order to minimize the total time required to turn out all the books. Also find the total elapsed time and idle time of each machine.

Books	A	B	C	D	E
Machine-I	3	7	4	5	7
Machine-II	6	2	7	3	4

9. Using dominance matrix given by

Player B

principle, solve the payoff



10. A super market has two sales girls. The service time for each customer is 4 min on the average and the arrival rate is 10 per hr. Find
- The probability that an arrival has to wait.
 - The expected percentage of idle time for each girl.
 - The expected waiting time of a customer in the system.
11. A contractor has to supply 10,000 bearings per day to an automobile manufacturer. He finds that when he starts a production run, he can produce 25,000 bearings per day. The holding cost of bearing in stock is Rs 0.02 per year. Setup cost of a production is Rs 18. How frequently should the production run be made.
12. Find the values of $\text{Max}(y_1, y_2, y_3)$ subject to $y_1 + y_2 + y_3 = 5, (y_1, y_2, y_3 \geq 0)$
- By using dynamic programming.
13. How the computer is used in simulation to make the effective business section?



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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

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IV Year B.Tech. ME - I Semester

L T/P/D C
4 1/- 4

(R12MTH1106) - OPERATIONS RESEARCH

- UNIT - I** Introduction
Development - Definition- Characteristics and Phases Types of operation Research models - applications, Allocation: Linear Programming - Problem Formulation - Graphical solution - Simplex method - Artificial variables techniques - Two-phase method. Big-M method - Duality Principle
- UNIT - II** Transportation Problem
Formulation - optimal solution - unbalanced transportation problem - Degeneracy. Assignment problem - Formulation - Optimal solution - Variants of Assignment Problem - Traveling Salesman problem.
- UNIT - III** Sequencing
Introduction - Flow - Shop sequencing - n jobs through two machines - n jobs through three machines - Job shop sequencing two jobs through 'm' machines

Replacement : Introduction - Replacement of items that deteriorate with time - when money value is not counted and counted - Replacement of items that fail completely. group replacement.
- UNIT - IV** Theory of Games
Introduction - Minimax (maximin) - Criterion and optimal strategy - Solution of games with saddle points - Rectangular games without saddle points - dominance principle - $m \times 2$ & $2 \times n$ games - graphical method.
- UNIT - V** Waiting Lines
Introduction - Single Channel - Poisson arrivals - exponential service times - with infinite population models - Multichannel - Poisson arrivals - exponential service times with infinite population single channel Poisson arrivals.
- UNIT- VI** Inventory
Introduction - Single item - Deterministic models - Purchase inventory models with one price and multiple price break and multiple price breaks - shortages are not allowed - Stochastic models - demand may be discrete variable or continuous demand and no set up cost Single period model.
- UNIT - VII** Dynamic Programming
Introduction - Terminology - Bellman's Principle of optimality - Applications of dynamic programming - shortest path problem - linear programming problem.
- UNIT - VIII** Simulation
Definition - Types of simulation models - phases of simulation - applications of simulation - Inventory and Queuing problems - Advantages and Disadvantages - Brief Introduction of Simulation Languages.

B.TECH. - MECHANICAL ENGINEERING

Text Books:

1. Operations Research / J.K. Sharma 4e. / Mac Milan
2. Operations Research / R.Pannerselvam 2e., PHI Publications.

References:

1. Operation Research / A.M.Natarajan, P.Balasubramani, A. Tamilarasi / Pearson ducation.
2. Operations Research: Methods & Problems / Maurice Saseini. Arthur Yaspan & Lawrence Friedman
3. Introduction to O.R / Taha 8e/ PHI
4. Operations Research / Wagner / PHI Publications.
5. Operations Reaseaech / S.D. Sharma – Kedarnath
6. O.R/ Wayne L. Winston / Thomson Brooks/ cole
7. Introduction to O.R / Hiller & Libermann (TMH)



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STRICTLY CONFIDENTIAL



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
Kukatpally, HYDERABAD – 500 085, Telangana (India)

From

Date: 19-03-2016

Dr. B.ANJANEYA PRASAD

M.Tech., Ph.D., F.I.E., MISTE, M.C.I., MSESIL, MASME

**Professor of Mechanical Engg. &
DIRECTOR OF EVALUATION**

To

Dr. I. Satyanarayana

**Prof. & Principal, Mech. Engg. Dept,
Sri Indu Instit of Engg. & Tech.,
Ibrahimpatnam.**

Dear Sir/Madam,


I am happy to inform you that, you are appointed as paper setter in the subject of **ENGINEERING DRAWING** for **B.Tech I Year Examinations, 2016**.

I request you to prepare **Two** sets of Question Papers in the subject mentioned above. Please send the soft copy of question papers to acecommn.2014@gmail.com and hard copy of bill form to the following address within **One Week** from the date of receipt of this letter.

Dr. B. Ramesh Chandra, Additional Controller of Examinations, EDEP Section, Examinations Building, 2nd floor, JNTUH Kukatpally, Hyderabad – 500 085 (Mobile No: 8008103826).

The remuneration for setting of question paper of 3 hours duration is at the rate of Rs.500/- per each question paper. You are requested to send the remuneration bill (include postal receipt, if any) duly signed, along with the question paper(s). Requested to follow the guidelines given below.

1. The questions are to be prepared to cover the entire range of prescribed syllabi of the subject and units, Adopting SI Systems of units only.
2. Kindly set 8 questions (Questions may contain sub questions i.e., 1.a, b,) in each of the question paper out of which candidates have to answer any five full questions.
3. The student must be able to answer each question in about 30 minutes and the maximum marks allotted for each question is 16 marks.
4. **You are requested to include atleast four numerical problems if the course requires.**
5. You are requested not reproduce questions from the guides or study materials.
6. You are requested to confirm your acceptance through mail.
7. You are requested to use template provided.
8. Kindly keep your appointment strictly confidential.


Sri Indu Institute of Engineering & Tech.
Shenguda(V), Ibrahimpatnam(M),
R.R. Dist. Telangana -501 510

DIRECTOR OF EVALUATION



STRICTLY CONFIDENTIAL
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
Kukatpally, HYDERABAD – 500 085, Telangana (India)

From

Date: 21-07-2016

Dr. B.ANJANEYA PRASAD

M.Tech.,Ph.D.,FIE.,MISTE,M.C.I.,MSESL.,MASME
Professor of Mechanical Engg. &
DIRECTOR OF EVALUATION

To

Dr.I.Satyanarayana, Professor of ME, Sri Indu Institute of Engg.,

Dear Sir/Madam,

I am happy to inform you that, you are appointed as paper setter in the subject of REFRIGERATION (R15) for M.Tech I Semester Examinations, 2016.

I request you to prepare **Two** sets of Question Papers in the subject mentioned above. Please send the soft copy to acecommn.2014@gmail.com and hard copy of remuneration bill by mentioning the subject name and code number on the covers to the following address within **One Week** from the date of receipt of this letter.

Dr.B.Ramesh Chandra, Additional Controller of Examinations, EDEP Section, Examinations Building, 2nd floor, JNTUH Kukatpally, Hyderabad – 500 085. Mobile Number 8008103826.

The remuneration for setting of question paper of 3 hours duration is at the rate of Rs.1200/- for each question paper.

Kindly follow the guidelines given below for setting the question paper.

1. The questions are to be prepared from **within** and in the **entire range of prescribed syllabus** of the subject. The question paper should consists of Part-A & Part-B.
2. **Part-A** is compulsory question where it consists of five sub questions, one from each unit and carries 5 marks each. This will be treated as question 1.
3. **Part-B** consists of five questions (numbered from 2 to 6) carries 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question, there will be an "either" "or" choice (that means there will be two questions from each unit and the student should answer only one question).
4. The student must be able to answer all questions in Part-'A' in about 60 minutes and each question from Part-B in about 20 minutes.
5. You are requested to include atleast four **numerical problems** if the course requires.
6. You are requested not to reproduce questions either from guides or study materials.
7. You are requested to confirm your acceptance through e-mail.
8. **You are requested to use template provided.**
9. **Kindly keep your appointment strictly confidential.**

Yours Sincerely

BSP
DIRECTOR OF EVALUATION

Professor PL
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(D)
R.R. Dist. Telangana -501 510

Code No: 5291AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech I Semester Examinations, 2016

REFRIGERATION

(Heating Ventilation and Air Conditioning)

Time: 3hrs

Max.Marks:75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

5 × 5 Marks = 25

- 1.a) from Unit-1
- b) from Unit-2
- c) from Unit-3
- d) from Unit-4
- e) from Unit-5

PART - B

5 × 10 Marks = 50

2. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)
OR
3. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)
4. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)
OR
5. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)
6. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)
OR
7. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)
8. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)
OR
9. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)
10. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)
OR
11. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)

---00000---

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Sheriguda(V), Ibrahimpat.
R.R. Dist. Telangana -501 411

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
I Year -I Sem. M.Tech (HV&AC)

REFRIGERATION

UNIT-I:

Vapour Compression System: Analysis of vapour compression refrigeration cycle Reverse Carnot Cycle for vapour. Effect of suction temperature and condensing temperature on cycle performance. Practical refrigeration cycle, Sub cooled liquid and super heated vapour refrigeration cycles, their effect on performance. Multi-pressure system. Removal of flash gas, inter cooling. Compound compression- Multi vapour- Cascade system- dry ice system

UNIT -II:

Vapour Absorption System: Simple vapour Absorption system-Actual vapour absorption cycle-representation on enthalpy concentration h-c diagram, Water lithium bromide absorption system. Electrolux refrigerator- Aqua Ammonia Refrigeration System.

UNIT-III:

Aircraft Refrigeration: Steam jet water vapour system, thermoelectric refrigeration system, Vortex refrigeration system, Pulse refrigeration.

UNIT-IV:

Industrial Refrigeration: Chemical and process industries, Dairy plants, Petroleum Refineries

UNIT-V:

Refrigerants: Primary and secondary refrigerants. Designation of refrigerants, Desirable properties of refrigerants such as solubility in water and lubricating oil. Material compatibility, Toxicity, Flammability, Thermodynamic properties of refrigerants, Inorganic, Halo carbon refrigerants. Secondary refrigerants. Refrigerants mixtures, Newer refrigerants.

REFERENCES:

1. R&AC / C.P Arora./ TMG).
2. R&AC / Manohar Prasad.
3. R&AC / F. Stoecker & Jerold. W. Jones./ MGH Intrl 1982
4. Principles of Refrigeration / Roy. J. Dossat
5. Basic Refrigeration & Air Conditioning – P.N. Ananthanarayanan – McGraw Hill
6. Refrigeration & Air-Conditioning – Dr. S.S. Thipse - Jaico


PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(W),
R. R. Dist. Telangana -501 510

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD 500085
EXAMINATION BRANCH
REMUNERATION BILL

Name of Examination: _____ (Reg./Supl.) 2016

Name of the Staff member: _____

Designation & Address: _____

Mobile No: _____ Phone No: _____

Email: _____

Mandatory Details:

Name of the Bank _____ Branch _____ Bank IFSC code _____

A/C.NO																				
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Subject Code No.	Name of the Subject	No.of Sets	Amount(Rs.) @ Rs.1200 per set
	Total:		

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Place:

Date :

Signature of the staff member
(Affix Revenue Stamp if claim exceeds

Rs.5000.00)


PRINCIPAL
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Sheriguda(V), Ibrahimpetnam(M),
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Kukatpally, HYDERABAD – 500 085, Telangana (India)

From

Date: 06-06-2016

Dr. B.ANJANEYA PRASAD

M.Tech., Ph.D., FIE., MISTE, M.C.I., MSESI., MASME

Professor of Mechanical Engg. &

DIRECTOR OF EVALUATION

To

Dr.I.Satyanarayana

Prof. & Principal, Mech. Engg. Dept,

Sri Indu Instit of Engg & Tech.,

Ibrahimpatnam.

Dear Sir/Madam,

I am happy to inform you that, you are appointed as paper setter in the **subject of THERMAL AND NUCLEAR POWER PLANTS (R13)** for **M.Tech I Semester Examinations, 2016**.

I request you to prepare **Two sets of Question Papers** in the subject mentioned above. Please send the soft copy to acecommn.2014@gmail.com and hard copy along with the remuneration bill by mentioning the subject name and code number on the covers to the following address within **One Week** from the date of receipt of this letter.

Dr.B.Ramesh Chandra, Additional Controller of Examinations, EDEP Section, Examinations Building, 2nd floor, JNTUH Kukatpally, Hyderabad – 500 085. Mobile Number 8008103826.

The remuneration for setting of question paper of 3 hours duration is at the rate of Rs.1200/- for each question paper.

Kindly follow the guidelines given below for setting the question paper.

1. The questions are to be prepared from **within** and in the **entire range of prescribed syllabus** of the subject. The question paper should consists of **Part-A & Part-B**.
2. **Part-A** is compulsory question where it consists of five sub questions, one from each unit and carries four marks each. This will be treated as question 1.
3. **Part-B** consists of five questions (numbered from 2 to 6) carries 8 marks each. Each of these questions is from one unit and may contain sub-questions. For each question, there will be an "either" "or" choice (that means there will be two questions from each unit and the student should answer only one question).
4. The student must be able to answer all questions in Part-'A' in about 60 minutes and each question from Part-B in about 20 minutes.
5. You are requested to include atleast four **numerical problems** if the course requires.
6. You are requested not to reproduce questions either from guides or study materials.
7. You are requested to confirm your acceptance through e-mail.
8. **You are requested to use template provided.**
9. **Kindly keep your appointment strictly confidential.**

Yours sincerely,

DIRECTOR OF EVALUATION

Ph.D., M.Tech., FIE., MISTE, M.C.I., MSESI., MASME
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(M),
R.R. Dist. Telangana -501 510

Code No: 5199E

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech I Semester Examinations, 2016

THERMAL AND NUCLEAR POWER PLANTS

(Power Plant Engineering and Energy Management)

Time: 3hrs

Max.Marks:60

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

PART - A

5 × 4 Marks = 20


- 1.a) from Unit-1
- b) from Unit-2
- c) from Unit-3
- d) from Unit-4
- e) from Unit-5

PART - B

5 × 8 Marks = 40

2. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)
OR
3. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)
4. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)
OR
5. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)
6. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)
OR
7. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)
8. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)
OR
9. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)
10. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)
OR
11. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)

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Institute of Engineering & Tech.
Srienguda(V), Ibrahimpatnam(M).
R. Dist. Telangana -501 510

THERMAL AND NUCLEAR POWER PLANTS

UNIT -I:

INTRODUCTION: Sources of energy, Type of Power plants. Direct energy conversion system, Energy sources in India, Recent developments in power generation, Combustion of coal, Volumetric analysis, Gravimetric analysis. Fuel gas analysis.

Steam power plant: Introduction. General layout of steam power plant, Modern coal. Fired Steam, Steam power plant. Power plant cycle, Fuel Handling, Combustion equipment, Ash handling, Dust collectors.

Steam Generators: Types, Accessories. Feed water heaters, Performance of boiling, Water treatment, Cooling towers. Steam turbines. Compounding of turbines, Steam condensers, Jet and surface condensers.

UNIT-II:

GAS TURBINE POWER PLANT: Cogeneration. Combined cycle power plant, Analysis, Waste heat recovery, IGCC power plant, Fluidized bed, Combustion, Advantages, Disadvantages

UNIT-III:

NUCLEAR POWER PLANT: Nuclear physics, Nuclear Reactor, Classification, Types of reactors, Site selection. Method of enriching uranium. Application of nuclear power plant. Nuclear Power Plant Safety: Bi-Product of nuclear power generation, Economics of nuclear power plant, Nuclear power plant in India, Future of nuclear power.

UNIT-IV:

ECONOMICS OF POWER GENERATION: Factors affecting the economics, Loading factors, Utilization factor, Performance and operating characteristics of power plant, Point economic load sharing, Depreciation. Energy rate, Criteria for optimum loading. Specific economic energy problem

UNIT-V:

POWER PLANT INSTRUMENTATIONS: Classification, Pressure measuring instrument, Temperature measurement and Flow Measurement, Analysis of combustion gases, Pollution types, Methods of control.

REFERENCES:

1. Power Plant Engineering / P.K.Naga / TMH
2. Power Plant Engineering / R.K.Rajput/ Lakshmi Publications.
3. Power Plant Engineering / P.C.Sharma/ Kotearia Publications.
4. Power Plant Technology / Wakil.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD 500085
EXAMINATION BRANCH
REMUNERATION BILL

Name of Examination: _____ (Reg./Supl.) 2016

Name of the Staff member: _____

Designation & Address: _____

Mobile No: _____ Phone No: _____

Email: _____

Mandatory Details:

Name of the Bank _____ Branch _____ Bank IFSC code _____

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PAN NO													
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Subject Code No.	Name of the Subject	No. of Sets	Amount(Rs.) @ Rs.1200 per set
Total:			

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Certified that the above work for which remuneration claimed is completed and in case, if the amount claimed is found to be in excess than eligible, I will refund the excess amount. I also certify that all the other particulars. Pertaining to bank details and PAN number are correct.

Place:

Date :

Signature of the staff member
(Affix Revenue Stamp if claim exceeds

Rs.5000.00)

Passed for Rs.....
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A.C. Sridu Institute of Engineering & Tech.
Hyderabad (V), Ibrahimpatnam Dist.
Telangana - 501 510



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Kukatpally, HYDERABAD – 500 085, Telangana (India)

From

Date: 08-06-2016

Dr. B. ANJANEYA PRASAD

M.Tech.,Ph.D.,FIE.,MISTE,M.C.I.,MSESL,MASME

Professor of Mechanical Engg. &

DIRECTOR OF EVALUATION

To

I.Satyanarayana, Sri Indu College of Engg. & Tech.

Dear Sir/Madam,

I am happy to inform you that, you are appointed as paper setter in the subject of **PRECISION ENGINEERING (R15)** for M. Tech II Semester Examinations, 2016.

I request you to prepare **Two sets of Question Papers** in the subject mentioned above. Please send the soft copy to acecommn.2014@gmail.com and hard copy along with the remuneration bill by mentioning the subject name and code number on the covers to the following address within **One Week** from the date of receipt of this letter.

Dr.B.Ramesh Chandra, Additional Controller of Examinations, EDEP Section, Examinations Building, 2nd floor, JNTUH Kukatpally, Hyderabad – 500 085. Mobile Number 8008103826.

The remuneration for setting of question paper of 3 hours duration is at the rate of Rs.1200/- for each question paper.

Kindly follow the guidelines given below for setting the question paper.

1. The questions are to be prepared from **within** and in the **entire range of prescribed syllabus** of the subject. The question paper should consists of **Part-A & Part-B**.
2. **Part-A** is compulsory question where it consists of five sub questions, one from each unit and carries 5 marks each. This will be treated as question 1.
3. **Part-B** consists of five questions (numbered from 2 to 6) carries 10 marks each. Each of these questions is from one unit and may contain sub-questions. For each question, there will be an "either" "or" choice (that means there will be two questions from each unit and the student should answer only one question).
4. The student must be able to answer all questions in Part-'A' in about 60 minutes and each question from Part-B in about 20 minutes.
5. You are requested to include atleast four **numerical problems** if the course requires.
6. You are requested not to reproduce questions either from guides or study materials.
7. You are requested to confirm your acceptance through e-mail.
8. **You are requested to use template provided.**
9. **Kindly keep your appointment strictly confidential.**

Yours Sincerely

DIRECTOR OF EVALUATION

PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(V),
R.R. Dist. Telangana -501 510

R15

Code No:

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech II Semester Examinations, 2016

PRECISION ENGINEERING

(DESIGN FOR MANUFACTURING/ DESIGN AND MANUFACTURING)

Time: 3hrs

Max.Marks:75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.


PART - A**5 × 5 Marks = 25**

- 1.a) from Unit-1
- b) from Unit-2
- c) from Unit-3
- d) from Unit-4
- e) from Unit-5

PART - B**5 × 10 Marks = 50**

2. Unit-1
(In this sub questions may be given as numbered as a, b etc)
OR
3. Unit-1
(In this sub questions may be given as numbered as a, b etc)
4. Unit-2
(In this sub questions may be given as numbered as a, b etc)
OR
5. Unit-2
(In this sub questions may be given as numbered as a, b etc)
6. Unit-3
(In this sub questions may be given as numbered as a, b etc)
OR
7. Unit-3
(In this sub questions may be given as numbered as a, b etc)
8. Unit-4
(In this sub questions may be given as numbered as a, b etc)
OR
9. Unit-4
(In this sub questions may be given as numbered as a, b etc)
10. Unit-5
(In this sub questions may be given as numbered as a, b etc)
OR
11. Unit-5
(In this sub questions may be given as numbered as a, b etc)

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech – I year I Sem. (Design for Manufacturing)

PRECISION ENGINEERING

UNIT I:

Concepts of Accuracy:

Introduction – Concept of Accuracy of Machine Tools – Spindle and Displacement Accuracies – Accuracy of numerical Control Systems – Errors due to Numerical Interpolation Displacement Measurement System and Velocity lags.

Geometric Dimensioning and Tolerancing: Tolerance Zone Conversions – Surfaces, Features, Features of Size, Datum Features – Datum Oddly Configured and Curved Surfaces as Datum Features, Equalizing Datums – Datum Feature of Representation – Form controls, Orientation Controls – Logical Approach to Tolerancing.

UNIT II:

Datum Systems:

Design of freedom, Grouped Datum Systems – different types, two and three mutually perpendicular grouped datum planes; Grouped datum system with spigot and recess, pin and hole; Grouped Datum system with spigot and recess pair and tongue – slot pair – Computation of Transnational and rotational accuracy, Geometric analysis and application.

UNIT III:

Tolerance Analysis:

Process Capability, Mean, Variance, Skewness, Kurtosis, Process Capability Metrics, Cp, Cpk, Cost aspects, Feature Tolerances, Geometric Tolerances. Surface finish, Review of relationship between attainable tolerance grades and different machining process, Cumulative effect of tolerances sure fit law, normal law and truncated normal law.

UNIT IV:

Tolerance Charting Techniques:

Operation Sequence for typical shaft type of components, Preparation of Process drawings for different operations, Tolerance worksheets and centrally analysis, Examples, Design features to facilitate machining; Datum Features – functional and manufacturing Components design – Machining Considerations, Redesign for manufactured, Examples.

UNIT V:

Fundamentals of Nanotechnology: Systems of nanometer accuracies – Mechanism of metal Processing – Nano physical processing of atomic bit units. Nanotechnology and Electrochemical atomic bit processing.

Measuring Systems Processing: In processing or in-situ measurement of position of processing point- Post process and on-machine measurement of dimensional features and surface-mechanical and optical measuring systems.

REFERENCES:

1. Precision Engineering in Manufacturing/Murthy R.L./New Age International (P) limited, 1996.
2. Geometric Dimensioning and Tolerancing / James D. Meadows / Marcel Dekker inc. 1995.
3. Nano Technology / Norio Taniguchi / Oxford University Press, 1996.
4. Engineering Design – A systematic Approach / Matousek / Blackie & Son Ltd., London
5. Precision Engineering/VC Venkatesh & S Izman/TMH


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD 500085
EXAMINATION BRANCH
REMUNERATION BILL

Name of Examination: _____ (Reg./Supl.) 2016

Name of the Staff member: _____

Designation & Address: _____

Mobile No: _____ Phone No: _____

Email: _____

Mandatory Details:

Name of the Bank _____ Branch _____ Bank IFSC code _____

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Subject Code No.	Name of the Subject	No. of Sets	Amount(Rs.) @ Rs.1200 per set
	Total:		

Received Rupees _____ only

Certified that the above work for which remuneration claimed is completed and in case, if the amount claimed is found to be in excess than eligible, I will refund the excess amount. I also certify that all the other particulars. Pertaining to bank details and PAN number are correct.

Place:

Date :

Signature of the staff member
(Affix Revenue Stamp if claim exceeds

Rs.5000.00)

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A C E


PRINCIPAL
 Sri Indu Institute of Engineering & Tech.
 Sherguda (V), Ibrahimpatnam (M),
 R.R. Dist. Telangana -501 510

Sr. Asst.

A.R.

DR

DIRECTOR OF EVALUATION

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

Kukatpally, HYDERABAD – 500 085, Telangana (India)

From

Date: 23-12-2015

Dr. B.ANJANEYA PRASAD

M.Tech., Ph.D., FIE., MISTE., M.C.I., MSES., MASME

Professor of Mechanical Engg. &

DIRECTOR OF EVALUATION

To

Dr. I. Satyanarayana

Prof. & Principal, Mech. Engg. Dept,

Sri Indu Instit of Engg & Tech.,

Ibrahimpattanam.

Dear Sir/Madam,

I am happy to inform you that, you are appointed as paper setter in the **subject of THERMAL AND NUCLEAR POWER PLANTS (R13)** for **M.Tech I Semester Examinations, 2016**.

I request you to prepare **Two sets of Question Papers** in the subject mentioned above. Please send the soft copy to acecomma.2014@gmail.com and hard copy along with the remuneration bill by mentioning the subject name and code number on the covers to the following address within **One Week** from the date of receipt of this letter.

Dr.R.Sridevi, Additional Controller of Examinations, EDEP Section, Examinations Building, 2nd floor, JNTUH Kukatpally, Hyderabad – 500 085. Mobile Number 8008103826.

The remuneration for setting of question paper of 3 hours duration is at the rate of Rs.600/- for each question paper.

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8. **You are requested to use template provided.**
9. **Kindly keep your appointment strictly confidential.**

PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Ibrahimpattanam, Ibrahimpattanam
R. Dist. Telangana -501 111

DIRECTOR OF EVALUATION

Code No:

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M. Tech I Semester Examinations, 2016

THERMAL AND NUCLEAR POWER PLANTS

0

Time: 3hrs

Max.Marks:60

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 8 marks and may have a, b, c as sub questions.

PART - A

5 × 4 Marks = 20

- 1.a) from Unit-1
- b) from Unit-2
- c) from Unit-3
- d) from Unit-4
- e) from Unit-5

PART - B

5 × 8 Marks = 40

2. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)

OR

3. Unit-1
(In this sub questions may be given as numbered as a, b, c etc)

4. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)

OR

5. Unit-2
(In this sub questions may be given as numbered as a, b, c etc)

6. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)

OR

7. Unit-3
(In this sub questions may be given as numbered as a, b, c etc)

8. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)

OR


9. Unit-4
(In this sub questions may be given as numbered as a, b, c etc)

10. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)

OR

11. Unit-5
(In this sub questions may be given as numbered as a, b, c etc)

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Jawahar Institute of Engineering & Tech.
Vijayapada(V), Ibrahimpatnam
Dist. Telangana -501 510

THERMAL AND NUCLEAR POWER PLANTS

UNIT -I:

INTRODUCTION: Sources of energy, Type of Power plants. Direct energy conversion system, Energy sources in India, Recent developments in power generation, Combustion of coal, Volumetric analysis, Gravimetric analysis. Fuel gas analysis.

Steam power plant: Introduction. General layout of steam power plant, Modern coal. Fired Steam, Steam power plant. Power plant cycle, Fuel Handling, Combustion equipment, Ash handling, Dust collectors.

Steam Generators: Types, Accessories. Feed water heaters, Performance of boiling, Water treatment, Cooling towers. Steam turbines. Compounding of turbines, Steam condensers, Jet and surface condensers.

UNIT-II:

GAS TURBINE POWER PLANT: Cogeneration. Combined cycle power plant, Analysis, Waste heat recovery, IGCC power plant, Fluidized bed, Combustion, Advantages, Disadvantages

UNIT-III:

NUCLEAR POWER PLANT: Nuclear physics, Nuclear Reactor, Classification, Types of reactors, Site selection. Method of enriching uranium. Application of nuclear power plant. Nuclear Power Plant Safety: Bi-Product of nuclear power generation, Economics of nuclear power plant, Nuclear power plant in India, Future of nuclear power.

UNIT-IV:

ECONOMICS OF POWER GENERATION: Factors affecting the economics, Loading factors, Utilization factor, Performance and operating characteristics of power plant, Point economic load sharing, Depreciation. Energy rate, Criteria for optimum loading. Specific economic energy problem

UNIT-V:

POWER PLANT INSTRUMENTATIONS: Classification, Pressure measuring instrument, Temperature measurement and Flow Measurement, Analysis of combustion gases, Pollution types, Methods of control.

REFERENCES:

1. Power Plant Engineering / P.K.Naga / TMH
2. Power Plant Engineering / R.K.Rajput/ Lakshmi Publications.
3. Power Plant Engineering / P.C.Sharma/ Kotearia Publications.
4. Power Plant Technology / Wakil.



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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY, HYDERABAD 500085
EXAMINATION BRANCH
REMUNERATION BILL

Name of Examination: _____ (Reg./Supt.) 2016

Name of the Staff member: _____

Designation & Address: _____

Mobile No: _____ Phone No: _____

Email: _____

Mandatory Details:

Name of the Bank _____ Branch _____ Bank IFSC code _____

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Subject Code No.	Name of the Subject	No.of Sets	Amount(Rs.) @ Rs.600 per set
	Total:		

Received Rupees _____ only

Certified that the above work for which remuneration claimed is completed and in case, if the amount claimed is found to be in excess than eligible, I will refund the excess amount. I also certify that all the other particulars. Pertaining to bank details and PAN number are correct.

Place:

Date :

Signature of the staff member
(Affix Revenue Stamp if claim exceeds

Rs.5000.00)

Passed for Rs.....
(Rupees.....
.....only)

P. Ramani
 Institute of Engineering & Tech.
 Sieriguda(V), Ibrahimpatnam(M),
 R.R. Dist. Telangana -501 510

VERIFIED BY

sr. Asst.

A.R.

DR

DIRECTOR OF EVALUATION