

Guideline for submission of Referee/ project report for T. Engg. And Associate Membership (C. Eng.) Examinations Respectively.

1. **ELIGIBILITY:** Candidates are required to submit a project report to complete the requirements of T. Engg/Associate Membership (C. Engg) Examination.

A candidate for T. Eng Examination can take up submission of his report only after he has obtained final pass in Part 1 of T. Engg. Examination and after he/she has appeared and obtained atleast 40% marks in atleast five subjects of Part II Engg.

A candidate of associate membership (C.Eng.) Examination can take up submission of his project work required under section – B only after obtaining a final pass in section-A examination and only after he/she has appeared for all compulsory paper of section –B And passed at least three compulsory subject (see also Para 3 under scope.)

Candidate will be allowed to enroll for the final attempt to obtain final pass in part –II and section ‘B’ only after they have submitted Referee /project report respectively along with payment of appropriate fees.

Therefore, candidates enrolling for final attempt to obtain final pass in part II/Section B must ensure that they have submitted their application or submit the referee/ project report giving brief write up in 300/500 words as per guide lines in Para 2 given below

Guideline for selection of the topic of project work and preparation and submission of project report are as follows.

2. **APPROVAL:** Candidate should obtain approval of the examination committee for his choice of the referee and topic for the project work before undertaking the detailed project work. Application in this regard should be made in the prescribed form, which can be obtained on payment of a fee of Rs 15/- including cost guidelines for submission of Referee/ project report together with a brief write up in 300/500 words of the topic of the referee /project report prepared to be under taken and should contain concise summary of essential features of the project work, and should contain purpose, General Methods and steps to be followed in the project work, apparatus/ equipment used, engineering techniques and practice employed, expected results and conclusion arising out of the project work .

Candidate should note that the project work must be relevant to mechanical engineering profession in which that are trained/ employed. Approval for writing/ submitting project work based on purely commercial in nature will not be given.

3. **SCOPE:** The project should demonstrate the ability of candidate to apply the techniques of engineering Science & Technology they have learnt/observed during their apprenticeship/ course of study for Institutional examination to specific situation or any functional area. The area chosen may be one or more of the areas which compulsory

papers are prescribed for Part II, Section A & Section B Examination or the areas from which candidates have chosen their optional papers for Section B Examination. Candidates should have also appeared for the particular paper of Section B, if the project chosen is from the area of the optional Paper.

The reports should demonstrate the ability of the candidate for data collection, analysis of data collected, Formulation of recommendations and for suggesting a viable scheme for implementation of his recommendations.

The data should be collected other by his own observations and measurement or gathered from generally accepted valid first source like performance report from production, etc if general datas industry wise or nations based are used then sources shall be quoted and should be generally accepted source like industry publication. Government Gadgets etc. All the step the analysis of data and relevant theory shall be include in the report.

While formulating recommendations with expected costs and benefits, advantages and disadvantage of recommendation shall be clearly discussed. The suggested scheme for implementation of recommendation should be clearly and logically laid out with all details of the steps involved of time schedules for implementing steps. Precautions are to be observed/monitoring etc. A synopsis has also to be submitted along with the project report.

4. REFEREE: The project work should be done under the guidance of a corporate member of the institution. A certificate from the Referee should be submitted as per Performa given below and these certificates should be bound along with the report.

CERTIFICATE FROM THE REFEREE

The Performa of certificate will be as follows

This is to certify that the project work titled

Is a bonafide work certified out by

(Name of the candidate)

Mem No.....

I also certify that I have interviewed the candidate with regard to the practical work carried out by him/her & I have scrutinized his/ her diary & assessed the same accordingly. I consider him/her eligible/ ineligible of Part II/ Section B examination, as he/she has/ has not attained sufficient knowledge and acumen to be a professional engineer in course of time.

10.11 LIST OF TABLES

10.11.1The contents shall be followed by a list of table indicating the table number, Table title and the corresponding page number. The table number shall be in

decimal notation indicating the chapter number and the table number in that chapter.

- 10.11.2 Any reference within the text shall be given by quoting the relevant number for eg.
Table 2.2

10.12 LIST OF ILLUSTRATIONS

10.12.1 The list of illustrations shall follow the list of tables indicating the figure numbers, Figures titles and the corresponding page numbers, The figure shall be in decimal notation indicating the chapter number and the figure number in the chapter for e.g. 6.4 refers to fig. 4 in chapter 6.10.12.2 any reference within the text shall be given by quoting the relevant number, e.g. fig. 4.6

10.12.2 NOMENCLATURE: The ‘Nomenclature’ follows the ‘List of illustration’ and contains the list of symbols used. They shall be arranged alphabetically in order of Latin Letters, superscripts and subscripts. As far as possible generally accepted symbols shall be used. Symbols not available in typewriter shall be written in permanent black ink.

10.13 PAGE NUMBERING

10.14.1 For items 10.8, 10.13 the page number shall be in small roman at 15mm from the bottom of the page centrally located.

1014.1 Page numbers in Arabic numerals shall start with 2 on second page of the introduction chapter. There shall be no numbering of pages on which new chapter begin. The number shall be 155mm from the top. Centrally located, all pages.

11. PROJECT WRITING: The work carried out shall be presented in one or more chapters depending upon nature of investigations. Each chapter shall have suitable title, eg.

THEORETICAL WORK
EXPERIMENTAL INVESTIGATION
RESULT OBTAINED etc.

12 CHAPTER NUMBERING: The chapter shall be numbered in Arabic numerals, section and sub-section of any chapter shall be in decimal notation, All chapter shall begin on a new page. The title for chapters, sections, and sub-sections shall be properly centered at the top of the page and have three spaces between them

- including the chapter number and should be typed in block capitals
- 12.1. INTRODUCTION : The introduction shall form chapter 1. It shall highlight the importance of reasons or need for investigation and also define and name topic and scope of work envisaged.
- 12.2 REVIEW OF LITERATURE: This shall form chapter II it shall present a critical Appraisal of the previous work done on the topic The extent of emphasis shall depend upon the nature of investigation.
- 12.2.1 Each chapter may have several sections and sub-sections with sub titles.
- 12.2.2 Each chapter shall present important a short deviations and representatives data in Table and figures. Information such as lengthy derivations, voluminous tables and large number of figures shall be presented in appendices.
- 12.3 Illustrations and tables shall be on separate sheets and not inserted in pages with running text. Illustrations shall be ammonia print. Depending on size, illustrations and tables shall be accommodated sheets, of size 220*280mm. If there are longer tables that can not be accommodated on these sheets, there shall be a continuation table. Very large illustrations shall be placed in a pouch at the end of the report. All illustrations and tables shall be mentioned in the text and should be so numbered that each one can be placed as close as possible, to the passage in the text where it is mentioned first. The illustrations and tables included in the appendices shall be accordingly mentioned in the text. Lettering on illustrations shall be uniform either in engineering letters or typed. Each illustration and table may follow its first mention in the text and not precede it. The illustrations should be self-sufficient to provide all the information. There must be a title for every figure and table.
- 12.4 Mathematical portion of the text shall be preferably typed. What it is not possible, ample space shall be left, and equations and symbols shall be inserted clearly in permanent black ink.
- 12.5 DISCUSSION AND CONCLUSIONS: These shall be recorded in last chapter of the project report. They shall include a thorough evaluation of the investigation carried out and shall bring out candidate's own contribution, if any. The discussion shall logically lead to certain conclusions and inferences. A suggested scheme of implementation should also be included.
- 12.6 BIBLIOGRAPHY: Bibliography shall follow the last chapter. It shall be given a list of works (paper, books etc) referred to in the boy of the text and they shall be arranged in the order they are first cited in the text. For any paper the information shall contain the name of the authors, the title of the journals, the volume number

underscored, the page number and the year of publication in parenthesis. In the case of references from the journals and books in languages other than English the titles of the journals or books should be transliterated into Latin script and not translated. For any book the information shall contain the names of authors, the title of the book, the name and the publisher, edition, and year of publication in parenthesis. For paper and books with joint authorship, the names of all authors shall be reproduced in same order. The author's name shall begin with surname followed by initials.

For eg.

Journal Energy Management
Quarterly Journal of National Productivity Council
Oct to Dec 80.

THE CONTROLLER OF EXAMINATION
INSTITUTION OF MECHANICAL ENGINEERS (I)

Sir,

I am pleased to inform you that Mr _____

a member of the institution of Mechanical Engineers (India) has sought my guidance for carrying out his Referee/Project Work to be computed by him as part of the requirements for Technician Engineers /Chartered Engineers Examination. I have studied the proposed project work in detail and I am of the opinion that it will bring out the effective application of mechanical engineering technique and practices in the following area:

I am also of the opinion that the proposed project work can enable the student to meet the project requirements laid down by the Examination committee.

I give my consent to guide him for the project.

Name of the referee _____

Academic Qualification _____

Professional Qualification _____

I Mech. E. (I) Mem. No. _____ Grade of Membership _____

Designation _____

Address (Office)

Address (Permanent residential)

Date: _____

Place: _____

Signature of the guide

The requirements of the scope of the project work are reproduced below:

GUIDELINES / NOTES TO REFEREE / GUIDES

Extracts from the 'project Report requirements'

SCOPE

The Project work should demonstrate ability of the student to apply engineering techniques to specific area or in any functional area in a specific manner. The area's chosen may be one or more of the areas in which compulsory papers are prescribed for Part-II or Section- B Examination or the areas from which candidates has chosen his optional papers for Section-B examination.

Candidates should have also appeared for the particular papers of Part-II or Section-B if the project chosen is from the area of an optional paper.

The reports should demonstrate ability of the candidate for data collection, Analysis of Data, Formulation of recommendations and for suggesting scheme for implementation of his recommendations.

Data should be collected either by candidate's own observations and measurements or gathered from generally valid first source like performance report from production, investigated results etc. If general data on industry wise or a national basis is used, the source shall be quoted and should be a generally accepted source like Industry Publication government statistics, etc. All the steps in the analysis of the data and the relevant theory shall be included in the Report.

While formulating the recommendations, the expected costs and benefits, advantages and disadvantages of the recommendations etc., shall be clearly discussed. The suggested scheme for implementation of the recommendation should be clearly and logically laid out, with all details of steps involved, time scheduled for implementing the steps, precautions to be observed, monitoring system etc. The Project Report should be submitted in the form of a dissertation with relevant data, drawing, computer programme, bibliography etc.

REFEREES/GUIDES SHOULD NOTE THAT

Before giving consent, the guide must go through the brief description and outline of the project work proposed to be undertaken along with the engineering techniques and practices used with reference to following aspects.

- (i) Relevance of the project work to the mechanical engineering profession.
- (ii) General steps student is going to follow while project work is undertaken.
- (iii) Expected result and conclusion at the end of the project work.

The guide should give this consent only if the guidelines given above are followed and sign the paper outlining the project work of students.

Before submitting the Project report the guide must go through the manuscripts and ensure that candidates have followed the requirements given in the instruction sheet before he is allowed to type it for final submission.

Referees/guides should carefully read guidelines/ salient features for Brief Write Up as well as for writing Referee/Project.

Address of Referee.....Signature of Reference.....
Name of Reference.....
Date.....Place..... Membership No. of Referee.....
Name and Address of the Candidate.....
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- 5. TIME-LIMIT: The project Report should be submitted to the institution within a period of one year from the date obtaining final pass in Part-II (T Engg. Examination) and two years from the date of obtaining final pass in the Section-B Examination.
- 6. FEES : The stipulated fee, which at present is Rs.750/- for T.Engg. Examination & Rs. 1000/- for C.Engg. Examination should be remitted in the same manner as examination fee along with the project Report.
- 7. NUMBER OF COPIES: Candidates should submit two hard-bound typed copies of the report. None of the copies submitted will be returned to candidates.
- 8. EVALUATION: The Referee/examiner will assess the work, and his decision will be given Accepted/Rejected. No marks will be allotted. If the Referee of a project Report is of the opinions that it is not worthy of acceptance but could be accepted if revised in the light of his report , the Examination Committee may return the Project-Report to

candidate for revision and resubmission a fresh fee will be charged for the resubmission of the Project Report.

If the referee recommends the rejection of the Report, it will be referred for valuation to a second referee. If the second referee also recommends the rejection of the Report, the Report shall be rejected.

If the second referee recommends the Report for acceptance it shall be submitted to the chairman of the Examination Committee whose decision will be final.

9. PUBLISHING RIGHTS

9.1 The Project report shall not be published before the decision of the Examination Committee for its acceptance or otherwise.

9.2 The institution will have the right to use the Project Report in any manner that may be deemed as suitable.

9.3 In case the author wishes to publish the report, due acknowledgement to the institution that it was Project Report prepared for the institution's examination has to be made by him. But prior permission for its publication must be obtained from the institution.

10. FORMAT OF THE PROJECT REPORT

The format to be followed for submission of the Report is as follows.

10.1 PAPER: The Report shall be typed double spaced on white paper, size 220*280mm.7 kg. Bond of the original typescript and carbon copy. Other carbon copies may be of any other bond paper.

10.2 TYPING: The typing shall be in standard letter size, double spaced on one side of the paper only, using black ribbon and black carbons.

10.3 MARGIN: The typed sheet shall have the following margins.

Left 35mm, Top35mm, RIGHT 20mm, Bottom 20mm.

10.4 BINDING: The report shall be resin bound in black.

10.5 LETTERING

10.5.1 The lettering shall be inscribed on the bound back and the front cover.

10.5.2 The bound back shall contain the title and the last name of candidate in 3mm size letters.

10.6 FRONT COVER

10.6.1 The front cover shall contain the following details.

10.6.2 Top-the title in block capitals of 6mm size letters, properly centered.

10.6.3 Center-Full name of candidates and membership No. in black capitals of 3mm size letters, of properly centered.

10.6.4 Bottom name of institution, year of submission-all in black capitals of 3mm size letters in separate lines with spacing and properly centered.

10.7 Blank Sheets: At the beginning and at the end of the report two white blank sheets of 7 kg. , bond paper shall be provided one for the purpose of binding and another to be left blank.

10.8 Title Sheet: The Title sheet shall be the first typed sheet and shall follow immediately the blank sheet.

10.9 Abstract: Every report shall have an abstract following the title sheet. The abstract shall be a concise summary of essential features of the material contained in the project Report. The abstract shall not exceed 200 words.

It should contain purpose methods, Results and conclusions of the Project Work. Abstract shall not be purely commercial in nature.

10.10: CONTENTS

The contents shall follow the abstract indicating the title of Chapters, Section and Sub-section etc. using decimal notation and S. I System of units of scientific and laboratory data with corresponding page numbers.

12.7 APPENDICES: Appendices shall follow Item 12.6 and will be numbered in Roman Capital .The appendices shall normally contain detailed or lengthy derivations, sample calculation, voluminous large figures and calculations.

12.8 ACKNOWLEDGEMENTS: Acknowledgements shall follow item (12.7) on a separate sheet. Acknowledgement shall indicate the extent to which assistance has been received by the candidate in his work from various sources. Two typed copies of the project as well as of the synopsis are to be prepared and two copies of each are to be submitted to the institution. Candidates will hand over one copy of each to the Guide and retain one of each for him.

SALIENT FEATURES AND IMPORTANT HINTS FOR SUBMITTING BRIEF WRITE UP OF THE PROJECTS.

First read the guidelines carefully in detail (attention is specially invited to clause 2 & 3). Choose the topic the candidates engaged in Mechanical Engineering Profession are to choose from the areas in which they are employed /trained .Some of them are enumerated below .

1.1.1 Design

1.1.2 Manufacturing and production of Machinery, Equipments, Assemblies and parts etc

1.1.3 Maintenance of plants and Machinery.

1.1.4 Operation of plants and machinery.

1.1.5 Quality control.

1.1.6 Material Management

1.1.7 Research Work

1.2 The headings of brief write up may be as follows:

1.2.1 Purpose

1.2.2 General Method & Steps to be followed.

1.2.3 Apparatus/equipments used.

1.2.4 Engineering Techniques and Practices employed.

1.2.5 Expected results and conclusion.

IMPORTANT HINTS FOR WRITING REFEREE/PROJECT REPORT:

2. PURPOSE

2.1. Some of the examples are enumerated below.

2.1.1 Improvement in design/production/manufacturing processes /efficiency/quality/standards/Maintenance Methods & techniques, induction of latest Technology, Automation, replacement of old equipments, Quality control, operation up to optimum level, Vendor developments, inventory control, Engineering economic analysis and Review of scientific developments.

2.1.2 Effects of above facts as given in sub para (I) are on the productivity, efficiency, saving of men hours, reduction in costs, benefits, advantage and disadvantage of recommendation and suggestion for viable schemes of implementation of his recommendations.

2.2 Describe each heading of para 2 giving details briefly and clearly relevant to the topic chosen by you. This is to be supported by theory with the practical/actual work done by you.

2.3 Expected results and conclusion:

Candidate should give his conclusion/recommendation by comparisons of results, data collected, analysis of data, cost benefits, advantage and disadvantages of his work with discussions.

2.4 Brief write-up for Project/Referee report should be relevant to the mechanical profession in which candidate is trained /employed.

2.5 It should demonstrate the ability of the candidate, in short, candidates should state clearly the contributions made by made by him /the actual work done by him on the project /Referee report and his ability. Engineering techniques adopted in specific areas or functional area chosen for the topic should be explained in a scientific manner.

2.6 Area of the topic chosen should be from one of the compulsory paper of section 'B' or Part-II of T.Engg. If chosen from operation papers, candidates should have also appeared for the particular paper.

2.7 This is issued for guidance of the candidates and does not absolve him from the guidelines and regulations of the institution laid and amended from time to time.

THE CONTROLLER OF EXAMINATION APPLICATION APPROVAL TO
INSTUTUTION OF MECHANICAL ENGINEERS (1) SUBMIT REFEREE
/PROJECT WORK

Name of candidate.....

Membership no. of Candidate Grade of Membership.....

Address (Permanent/Resident).....
.....
Details of appearance for Part-II/Section-B Examination.

Paper	Part-II/sec-B	Year of Exam	Mark Obtained	Pass/Fail
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6. Brief Write Up

Brief write up of the topic of the project in 300/500 words should be attached separately. The areas chosen may be one or more of the area in which compulsory papers are prescribed for part II or section B examination or the areas from which the candidates has chosen his option papers for section B examination. The candidate should have also appeared for the particular paper of section ‘B’. If the project chosen is from the area of an optional paper candidate/Referees/Guides should carefully read and follow salient features and important hints given in the CONSENT TO ACT AS REFEREE/PROJECT GUIDE for submitting brief write Ups and for writing referee/project report and ensure that they comply with the salient feature and guidelines.

7. Name of the unit/ company where project where project is proposed to be carried out

8. Propose title of the project report _____

9. Name, Designation, Membership detail and addresses of the referee or guide, under whose guidance the project I proposed to be carried out.

Name _____ Designation _____

Mem No. _____ Grade of Membership _____

Address

(PLEASE USE SEPRATE SHEET/SHEETS IF NECESSARY FOR GIVEN DETAILS OF/ITEM NO. 8, 9, 10, 11 OF THE FROM)

NOTE: A CANDIDATE SHOULD ENSURE THAT THE GUIDE CHOSEN BY HIM IS A CORPORATE MEMBER IN THE INSTITUTION. If you are unable to obtain signature of a corporate member you may obtain signature of an engineer working in central Govt. Polytechnic or Engineering College along with the company's /college seal below his/her signature obtained on a report.

10. Mechanical Engineering techniques and practices that will be used in the project work _____

11. Any other remark _____

Date _____ Candidate's signature _____

Place _____ Name _____

IMPORTANT: Consent from the Referee or guide in the form overleaf should be sent with the application