

UNIT 2: TECHNICAL WRITING

REPORT WRITING:

The word REPORT is derived from the Latin *REPOETARE* (meaning is to bring back). Over a period of time, it has evolved to mean that the gathered information is unbiased and evidence-based.

Definition: A report is usually a piece of factual writing, based on evidence, containing organized information on a particular topic.

OBJECTIVES OF REPORT WRITING:

The purpose for which reports are written vary widely. Given below are some important purpose of reports:

- To present a record of accomplished work
- To record an experiment
- To record research findings or technical specifications
- To document schedules, timetables, and milestones
- To document current status
- To document policies and procedures
- To present an annual reports
- To present organized information on a particular topic
- To recommend actions in order to solve certain problem

TYPES OF REPORTS:

On the basis of purpose, frequency or mode of presentation reports can be classified as follows:

- **Informative, Analytical(Purpose):**
An informative reports entails provision of all details and facts pertaining to the problem. On the other hand if reports are for analyzing the facts, drawing the conclusions and making a recommendations, they are known as Analytical reports. In short, an analytical reports are also known as interpretative or investigative reports.
- **Periodic, Special(Frequency):**
Periodic reports are either informational or analytical in their purpose. They are prepared and presented at regular time interval. Generally such reports contain a mere statement of facts in details or in the layout of fixed form. Special reports are related to single occasion. Special reports deal with non-recurrent problems.

- **Oral, Written (Mode of Presentation):**

An oral report is simple and easy to represent. It may communicate an impression of an observation. On the other hand written reports are always preferred as they give several advantages over oral reports.

CHARACTERISTICS OF ORAL REPORTS AND WRITTEN REPORTS:

Oral Reports	Written Reports
<ul style="list-style-type: none"> • Immediate feedback is possible 	<ul style="list-style-type: none"> • Immediate feedback is not possible
<ul style="list-style-type: none"> • Don't add to the permanent records of the organization 	<ul style="list-style-type: none"> • Contribute to the permanent records of the organization
<ul style="list-style-type: none"> • Audience needs to comprehend quickly as and when these are presented 	<ul style="list-style-type: none"> • Audience can ponder over these reports and understand at their own pace
<ul style="list-style-type: none"> • May be encumbered with irrelevant facts and overlook important ones 	<ul style="list-style-type: none"> • Are more accurate and precise as the writer will be careful in putting down the facts
<ul style="list-style-type: none"> • Cannot be referred to again and again 	<ul style="list-style-type: none"> • Can be edited, reviewed, stored and retrieved
<ul style="list-style-type: none"> • Have less professional value 	<ul style="list-style-type: none"> • Have more professional value

IMPORTANCE OF REPORTS:

A report is a basic management tool used in decision making process. Hence it is extremely important for organization of all types. They are vital, especially for large scale organizations that are engaged in multifarious activities handled by different departments. The following list will give you an idea of how important reports are to the organizations and individuals.

- A report is the only tangible product of a professional.
- Reports enable decision making and problem solving in organization
- Reports help the authorities in planning new ventures and in evaluating men and materials.
- Reports are an important mean of information dissemination within and outside the organization.
- Reports serve as a measure of growth, progress, or success of an organization.
- Reports serve as a valuable repository of information.
- Reports reveal gaps in thinking.
- Reports develop certain skills in the writer.

FORMATS OF REPORT:

Your report may have any one of the following formats:

- **Manuscript:**
A most commonly used format for reports and is generally used for formal communication. It can be used for all types of reports. It generally includes more elements like abstract, summary, appendix and so on.
- **Letter:**
When you send short reports of a few pages to outsiders, you can opt for a letter format. Besides all the routing parts it may include heading, illustrations, and footnotes.
- **Memo:**
A report you send to someone within your organization will be in a memo format. Your analysis, conclusions, recommendations are included in main text part.
- **Preprinted form:**
Reports containing routine matter and which are periodical in nature may be written in a form prescribed by organization. All you need to do is to fill in the blanks in preprinted form.

STRUCTURE OF REPORTS:

Just several organs constitute our body, various elements combine together to structure a report.

Though 19 elements are listed below, you need not use all of them in your report. While some of them may be needed in all reports, some may find a place only when your report gets published.

Following are the elements of Structure of a Report

Prefatory Parts:

Cover, Title page, Certificate, Acknowledgements, Contents, List of Illustrations, Abstract

Main Text:

Introduction, Discussion, Conclusions, Recommendations

Supplementary Parts:

Appendix/Appendices, References/Bibliography, Glossary

Optional Elements:

Frontispiece, Letter of Transmittal, Copyright notice, Preface, Summary, Index

TECHNICAL PROPOSAL:

A proposal is an offer by one party to provide a product or service to another party in exchange for money. It is a sales presentation, seeking to persuade the reader to accept the written plan for accomplishing a task.

A Proposal are written to people within an organization, to an outside company, or to the government.

Definition: Proposals are written offers to solve a technical problem or to undertake a project of practical or theoretical nature.

PURPOSES TO WRITE TECHNICAL PROPOSALS:

Proposals aim to solve a problem, alter a procedure, find answers to questions, offer advice and training, or conduct research on a topic of interest to both parties.

But proposals have varied purposes having a wide or narrow scope. Given below are a few examples to illustrate the diverse purposes of proposals:

- To construct parking slot, buildings, bridges,highways
- To survey areas for possible watersources
- To sell property such as buildings, machines,airplanes
- To plan and construct airport baggage conveyorsystems
- To modernize the office procedures of acompany
- To train international managers for work in foreigncountries
- To improve engineering performances within acompany
- To conduct the basic research before developing an automobile factory in aforeign country

Thus, proposals serve to review and improve existing products and service to meet the ever increasing and complex requirements of today's highly competitive business environment. They aim at providing new and sound ideas to accelerate the advancement of our society.

TYPES OF TECHNICAL PROPOSALS:

The two basic types of proposals are as follows. Both these types may be either solicited or unsolicited.

- Sales proposals (Businessproposal)
- Researchproposals

Sales proposals are also known as Business proposals. They are sent outside the company to potential clients or customers. An organization often knows in advance those customers that are

qualified to bid on a job. So request may come via email or in case of government via newspaper.

While preparing a **Solicited proposal**, the company should remember that, it will have many competitors bidding for same contract. To be successful the company's proposal should have stronger and more powerful arguments than those of others in order to get the contract. Proposal has to follow the requirements of the solicitor regarding the problem, solution, specific work to be done, format of the proposal, number of copies desired, deadlines etc.

Similarly, when company prepares **unsolicited proposal**, it needs to convince the reader that it understands the problem and that it is qualified to solve the problem successfully. **Sales proposal rarely duplicate one another in either structure or style.**

Research Proposals are usually academic in nature and **mostly solicited**. Professors or an institution for which they work, may submit a proposal to obtain a grant in response to a request from government or other agency. A research proposal may appear in foreign language. Whatever the research project, the basic content does not vary.

CHARACTERISTICS OF TECHNICAL PROPOSALS:

Technical proposals are persuasive blend of information, organization and reason. Essentially, technical proposal should:

- Demonstrate to appropriate decisions makers that their needs would be met with
- Be more creative than other form of writing
- Permit informality and personal approach in style to some extent
- Keep in view the customer's convenience, financial gain and prestige
- Look neat and attractive
- Include summary, background, objective of the problem, methodology and cost estimate
- Anticipate any possible reasons for rejection and provide suggestions for overcoming them
- Follow meticulously the requirements of the solicitor
- Contain certain or all elements of structure according to the purpose, usefulness and requirements of the recipient language
- Use plain, direct and unambiguous expressions

Remember that Proposals are concerned for the most part with future projects and hence writing proposal is different task as compared to writing other documents.

IMPORTANCE OF PROPOSALS:

- Proposals, like reports, are valuable records of information in company
- They act as an index of the company's growth or progress

- Successful proposals give financial returns to the company
- They help promote various research activities which are vital for others
- Proposal attempt to win contracts for the company undertaking the projects
- Proposal writing develops certain favorable and useful skills like communicative and organizational skills.
- It also enhances the power of estimation, judgment, and discrimination in writer.

STRUCTURE OF PROPOSALS:

Generally, all proposals have three main divisions: Prefatory parts, body of proposal, and supplementary parts. Depending upon the need and existing practice, you may choose the elements you require from these parts for your proposal.

1. Prefatory Parts

- Title page
- Letter of Transmittal
- Draft Contract
- Table of Contents
- List of Tables/figures
- Executive Summary

2. Body of Proposal

Introduction

- Problem
- Need
- Background
- Objectives
- Scope and limitation

Technical Procedures

- Methods and Sources
- Plan of attack

Managerial Procedures

- Sequence of activities
- Equipment, facilities, products
- Personnel qualifications

Cost Estimate

Conclusion

3. Supplementary Parts

- Appendices
- References

BUSINESS LETTERS:

SIGNIFICANCE OF BUSINESS LETTER:

Any business will have to correspond in writing with its customers, branches, suppliers, bankers, and others with whom it has or would like to have a lasting relationship. Business letters serve as a means to reach out a people not only within the locality and neighborhood but also in other cities and nations. They represent you when you conduct transactions in writing. They have become such an integral part of everyday life that one cannot think of running a business without the related correspondence.

Business letters still retain their importance in the business world for the following reasons:

- They assist you in sustaining your business relationship with other businesses and customers.
- They are appropriate form of communication when the information you wish to convey is complex.
- They serve as permanent records and are a valuable repository of information, which you can refer to in future.
- They help you reach a large and geographically diverse audience thereby enabling you to save money on telephone calls.

PURPOSE OF BUSINESS LETTERS:

The ultimate purpose of writing any business letter is to sustain the existing business relationships or to create and establish a new business relationship. But each individual letter will have a unique purpose. Therefore, Business letters are written for varied purposes as mentioned below:

- To inform
- To congratulate
- To enquire
- To order
- To request
- To complain
- To make an adjustment
- To collect dues
- To sell a product, service or scheme
- To apply for a job

BUSINESS LETTER TYPES AND THEIR OBJECTIVES

Types	Objectives
Credit	To enquire or request for loan
Collection	To collect past dues
Order	To place an order for product or service
Inquiry	To enquire the status of something
Claim	To lodge a complaint and ask for remedy
Adjustment	To inform how the complaint would be taken care of
Sales	To sell a product or service
Fundraising	To request the readers to donate money or time
Job application	To apply for an employment

STRUCTURE OF BUSINESS LETTERS:

Business letters have distinct structure and layout. Although there are different types of letters, each relevant in a specific context, they share a common structure comprising various elements or parts. You need to be familiar with elements, their position in the letter and the purpose for which they are included in the letter. Several of these elements appear in every letter, others appear only when desirable or appropriate.

STANDARD ELEMENTS:

Heading: This element is also known as letterhead, which shows the organization's name, full address, and telephone numbers. If a letterhead is not used, the heading includes the sender's address.

Date: This refers to the date the letter was written. It includes the date, month and the year in specific format. For international correspondence, check the accepted format for the recipient's region.

Inside address: This part of the letter identifies the recipient of the letter and is separated from the date by at least one blank line. A courtesy title should precede the recipient's name. Immediately following the addressee's name and title, separate lines should contain the name of the company, street address or post office box number, and city name with proper postal code. If you are writing internationally, the country name should be in capital letters and occupy the last line of inside address.

Salutation: Always try to address your letter to a person by name rather than title. Following are few examples of salutation,

Dear Students, Dear Colleagues, Dear Sir or Madam, Dear Purchasing Agent, Ladies or Gentlemen, Dear M.B Trivedi, Dear Mr. Trivedi.

Message: This part of the letter usually occupy the greatest amount of space. It should be single-spaced, with a blank line separating it from the preceding and the following part of letter. You should also separate each paragraph of message by a blank line.

Complementary Close: This element is a single word or phrase, separated from the message by a blank line.

e.g. Sincerely, Cordially, Truly, Faithfully, Respectfully, Yours faithfully, Yours truly, Yours sincerely, etc.

Your choice of close provides a way to create the desired tone. Sincerely and Cordially are widely accepted closing.

Signature Block: The complimentary closing line is followed by the signature block, which includes you signature, name and title. Every letter must end with a signature to give authenticity to the information contained in it. Place the signature block four lines below the complementary close. Include your name and title.

e.g. Cordially,
Mr. Santosh Singh
Senior Executive

ADDITIONAL ELEMENTS:

Formal letters differ greatly in subject matter, the identifying information they need and also the format they adopt. The following elements may be used in any combinations as per the requirement of the letters.

- Addressnotation
- Attention line
- Referenceinitials
- Subjectline
- Enclosurenotation
- Copynotation
- Mailingnotation
- Postscript

Explain how various details, at the sender end are covered in any business letter.

Details of the sender, who is the writer of the letter, are covered at the top right corner of the letter. It includes name, designation and official postal address of the writer, complete with pin code. On the same side, it is followed by date of writing the letter.

From:
Prof. (Dr) M. D. Desai
Electrical Engineering Deptt.
Institute of Technology,
Nirma University of Science & Technology
S.G. Highway
Ahmedabad 382 482
15 June, 2013

Most of the offices have their printed letter heads, for the official communication. In this case, the top of the letter has already name of the office in bold letters and bottom margin contain address of the institute, with phone numbers and email address. In this case only name, designation and short address of the writer may be sufficient. It should be followed by the date.

Sometimes the sender's details start with a word "from" at top. But, when the sender's details are written at top right corner, it is implied and "from" may not be necessary. Some people write senders details at top left corner and immediately start addressing the receiver. In this case, inclusion of "from" at top, gives more clarify.

SOME MORE POINTS ABOUT THE BUSINESS LETTERS:

- They are usually written / typed on plain, white paper, without lining, of foolscap A4 size.
- Official letters from the organization are usually sent on a printed letterhead.
- There is a tradition of keeping a copy signed by the forwarding officer, as an office copy (o/c) with an outward number and date marked by the dispatch section. It helps in the future communication.
- The language of the letter is decided by the addressed person or group. Most of the business letters are written to personnel or HR department. This type of letters should be written in simple, self-explanatory form. Technical jargon should be avoided.
- The official or business letters are usually typed by the office assistant. Proof reading and correction are very much necessary. During typing, some words or lines may be missed, some words may be misspelled, which may distort the meaning, date month and years may be wrong. Depending on the level of the sender and a receiver, proper addressing should be done. These points should be thoroughly checked. When the forwarding officer is a very senior person, he cannot go in to all these details but, the middle ranged officer, who drafted the letter should check the letter thoroughly, make necessary corrections and put his signature in a left hand margin of the office copy. So, in a big office, when the query comes, it can be directed to that person. In some big offices, the typist also marks his identity by initial characters of his name e.g. abc, kbc, etc.

- In person, if you speak anything nonsense, abusive or threatening language, it is not recorded. Of course, it is not a decent practice. Written correspondence results in a documented record. One should be very particular about it. Whether you are a purchaser or a supplier, an employer or an employee politeness is necessary at all levels.
- In an official communication, when a person is at a receiving end and writes to the controlling officer or an employer, extreme politeness is expected.

JOB APPLICATION:

Introduction:

In various industries and organizations, there is a requirement of managerial technical and non-technical staff. This requirement may be maximum, when the organization is starting for the first time. For a running organization, in case of some expansion or a new project in hand, there may be a major requirement of staff at various levels. There are various modes of employment for this purpose. Some of the organizations advertise and recruit directly. Earlier, this job was done by personnel department. Nowadays, the work is done by human resource (HR) department. Some companies outsource the work of recruitment to private recruitment agencies on behalf of their companies. In any case, the advertisement may be published in local, regional or national level newspapers, depending on the size of the company. Nowadays, the advertisements and announcements are through internet and websites, which has a global access. It increases opportunity as well as competitions. The government departments recruit through state and national level public service commissions.

In most of the cases, the printed application forms may be available free or on payment basis, from the concerned office or it can be downloaded from the website of the organization. For the government jobs, along with the application form, postal order of specified amount payable to specified agency is required to be sent. In case of a printed or a soft copy of the application form, the candidate has to fill up the details at specified columns. He has not much freedom. For additional information, extra sheets can be attached. The application form should be signed by the candidate and supported by copies of necessary documents. The application should be sent by registered post and Xerox copy should be retained by the candidate. For internal candidates, in government and semi-government offices, it is necessary to apply through proper channel. The candidate has to apply through the local controlling officer. An extra copy is marked for the local controlling officer. He forwards the application further, with his remarks. In government and semi-government office and sometimes in private too, no objection certificate is required from the present employer. Without this, the new employer may not consider the application and the present employer may not relieve the candidate.

RESUME:

Resume is just not your back ground, qualities and achievements. It should reflect your personality, to ensure interview call. If the resume is limited to one or two pages and carries different titles, fast screening is possible by the scrutinizer. It should cover important information on priority basis. It should match the requirement of the employer. White, A4 size plain paper should be used. Avoid unnecessary information. Resume should be typed.

- Decide what will be relevant for the job.
- Decide general structure by identifying the important heads of items like personal details, academic record, experience, achievements, special skills and expertise.
- Arrange topic heads, in a proper sequence.
- Give details in each head.
- The resume should be properly checked. Spelling and grammatical mistakes create a very bad impression

CONTENTS OF RESUME:

Following are the elements of Resume:

- Personal details: Full name (first name, second name and surname), Address, phone number, email address.
- Sex: Male/Female
- Age: _____
- Caste: _____
- Nationality: _____
- Religion: _____
(In India sex, age, caste, nationality and religion are part of the specified format. In advance countries, these points are considered as discriminatory features and are avoided or discouraged. Depending on the company and location of the company, one can use individual discretion, to include or exclude these details).
- Educational Qualification: It may start with the highest degree or recent degree. Usually, along with the degree, the name of the university, year of passing and class or grade point are covered.
- Achievement: It includes gold Medal, Award, special recognition, etc.
- Skills: It includes knowledge of computer language, familiarity with special software or tools like Matlab, Cadence, Zylink, Etap, Network, etc.
- Training: If some training at industry or other organization is taken, it can be mentioned.
- Project: UG project, PG project, Ph.D. project can be covered.
- R & D and Consultancy: Only research and consultancy assignments can be highlighted.

- Publications: Only number of papers published at national and international level maybe mentioned.

Some precautions for a Resume:

- Lined or colored paper or non-standard size of paper, should not be used.
- It should not be handwritten.
- Typing on both sides should be avoided.
- It should not be more than two pages.
- Xerox copy of resume should be avoided.
- Do not write irrelevant details.
- Do not cover very old information.
- Instead of writing paragraphs, use bullet points.
- Employment record should be continuous and consistent.
- Do not blame the present or previous employer.
- Do not show your impatience to leave the present job and join the new employer.
- The resume should be attractive by content and appearance.

Generally job experience and qualification are covered in a reverse chronological sequence in a resume. In case of a structural resume, depending on job requirement and position, the candidate may concentrate on and club the relevant experience specific details. It will help him to prove his competence for the nature of the job and specific position.

CURRICULUM VITAE (CV):

When a person applies for a job or admission for higher studies, the specified application form is accompanied by a resume or curriculum vitae. The resume is usually very short but, curriculum vitae (CV), is much detailed. It runs for large number of pages, to include lot many details. It also covers personal details and experience.

In case of a resume, generally the content is limited to two pages. It only highlights the main points. The details may be avoided. Curriculum Vitae (CV) is usually extensive. For a fresh graduate, the information to be covered may be less but, for a senior, experienced professional, there is accumulation of a lot of information. Depending on the nature of the job and industry also, some more information may be involved. The length of a CV is usually more than two pages. In some countries, resume and curriculum vitae are considered same. **Actually there is a small difference between the two.** Resume is more useful for a job in an industry or a private sector. Depending on the job and industry requirement, the candidate may add or delete or modify some information. It is somewhat flexible. The resume is in the form of a short summary of the career, where many things be omitted or highlighted, without details. As the resume is

employer and employment specific, the strength related to that job maybe given more weightage. Sometimes, the candidate may state his personal goal and ideology in a qualitative form.

Curriculum Vitae, on the other hand, may be exhaustive. It covers full details about the candidate, without missing any details. The format is almost standard. Some countries have developed their format with reference to migration. For employment purpose, the advertisement in a newspaper and getting hard copy of applications is a costly and time consuming process. If the requirement of a particular type of personnel is displayed via internet and if resumes or CVs are also collected through internet, the process is fast, cheaper and effective. In an online application, the signature of the applicant is missing. It lacks authentication. Somebody can apply on behalf of the other person. Of course, with scanning and password the problem can be solved, indirectly. If the format is standardized, it is also easy to scrutinize large number of applications.

STRUCTURE OF CV

- It starts with the title “Curriculum Vitae” in a bold or capital letters.
- Personal Details: Complete name, in the form of the first name, second name and family name or surname is the last entry. In some parts of India, the second name is father’s name. In northern India, the second name is usually extension of the first name. The name should be typed in bold or capital letters. In some cases, before name Mr/Ms/Mrs/Dr is written. The name is followed by address. Some people mention temporary and permanent address separately. Sometimes, office and residential addresses or address for communication are mentioned separately. It may ensure reliability of postal delivery. It further includes landline phone number with local, national and international code, mobile phone number; and email address. Official and personal both email address are mentioned.
- Photograph: In most of the cases, photograph may not be necessary. For admission purpose, national/international employment, immigration, passport and visa purpose, if specified, photo should be attached.
- Age: ____ Years ____ Months, Sex: Male/Female
- Marital Status: Married/Unmarried
- Cast: _____ Religion: _____
- Nationality: _____
- Skills: By experience, training or qualifications, some special skills may be developed by an individual. The special skills can be covered here.
- Experience: The experience is mentioned in a tabular form. It includes the name of the organization, the position and the dates of employment (from ____ to ____). Usually the experience is stated in a reverse sequence. So, if somebody is interested, only in recent experience, it can be referred accordingly.

- **Achievements:** It can be covered in the career history. His services may be appreciated by some certificates, rewards or felicitations. It is his achievement.
- **Education:** Starting with the highest degree the educational qualification is mentioned. It includes the Ph.D., post graduate and bachelor degree in engineering, management or in any other faculty.
- **Competitive Examinations:** If the candidate has covered some competitive examinations for study, admission or job purpose that can be mentioned. It may be GRE, GATE, GMAT, CAT, TOEFL, UPSC, IPS, IRS, etc.
- **Training:** On job, as per the requirement of the job or of the training, the candidate may undergo some training. The training may be arranged by the industry, supplier, government or private agency.
- **Professional Membership:** Engineers are associated by membership with national or international professional bodies like Institution of Engineers (I), Institute of Electronics Engineers, IEEE, ISA, ASHRE, Management Association, CII, Chamber of Commerce, etc.
- **Membership of Professional and Academic bodies:** Universities have board of studies, faculty, academic council, senate, syndicate etc. Membership of these bodies is prestigious. Many organizations have governing council and its membership is usually by nomination.
- **Publications:** Professors, researchers, engineers and scientists have large number of technical papers, published by them. Some of them may be presented at the national and international conferences. Papers are also, published in technical and professional journals. Some people also publish books.
- **Patents and IPR:** Many scientists, engineers and researchers, carry out some unique or innovative work and get the patents. It becomes intellectual property right of the researcher or an innovator.
- **Project and consultancy:** Professors at leading educational institutes, work for projects sponsored by government, industry, R&D organizations. It brings credit to the organization and individuals.
- **Hobbies:** In many cases, all round development of persons is given due consideration. Music, art, culture, drawing, painting, reading, writing are the hobbies helpful for personal growth.

COVER LETTER:

In response to the advertisement or announcement, many people just forward the C.V. CV usually does not carry signature. CV should have covering letter, referring to the advertisement, announcement, the job and position applied for. The covering letter is addressed to the particular employer. It is signed at the end. Covering letter plus CV makes the application for the job

position. Only CV cannot be considered as an application. In many cases, unsigned document is not considered authentic. Responsibility about the facts presented is endorsed by the signature. Whether the CV is sent in response to an advertisement, or an announcement, or without any advertisement, a covering letter is necessary. In case of advertisement or announcement, its dated reference may be given. In a covering letter, the candidate can mention about his attributes and interests matching with the job e.g. loyalty, reliability, problem solving capability, team building, leadership, experience and expertise, oral and written communication skill, interpersonal skill, administrative, planning and managerial capability. It adds job specific touch. A signed covering letter, written to a particular organization for a specific position is more specific and authentic. The words, phrases and statements used in the covering letter should reflect the strength and capabilities of the jobseeker, which will satisfy the requirement of the specific employer.

What additional points can be covered by the beginners in the CV?

For the fresh graduates from the college, there is nothing to be mentioned against experience and expertise. In such cases, the recommendation letters are very useful. The candidate or the recommender may write about communication, sincerity, intelligence, hardworking nature, team building, constructive leadership, creativity, analytical skill, research aptitude, intelligence quotient, integrity, problem solving capability, habit of technical reading, extra and co-curricular activities, association with the student sections of professional bodies, academic excellence, awards and prizes won, certificates of merit received.

Representation of the college or university at the state or the national level (in cultural and technical activities), seminars prepared and presented, minor and major projects undertaken (with title of project and name of industry or R & D organization), any industrial or professional training is taken, extra skills are developed with hardware and software tools – all these will add colorful feathers in the cap of the fresh candidate.

TYPES OF RESUME:

Resume can be written in different ways according to the requirements. Based on these, there are different types of resume listed below.

- **Functional Resume:** This is a simple resume which lists down the educational details and experience without following any chronology. People with career gaps may use this type of resume.
- **Chronological Resume:** This is written in reverse chronological sequence, with latest job first and first job last, followed by educational details, with highest degree first. It helps recruiter find out important factors faster.
- **Scannable Resume:** Nowadays, it is very important to prepare and upload your resume online. This helps companies search for relevant resume and call for interview. This method of recruiting is faster and money saving. You must write the resume in Scannable format and also put as many keywords as possible in order to make your resume get more chance to be tracked.

- **Visual Resume:** Visual resume is a latest trend which breaks down the monotony of black and white resume. The visual resume has color coding and simple design which makes resume attractive. Online templates are available to make these visual resumes.

AGENDA OF MEETING AND MINUTES OF MEETING (MOM):

An agenda is the important tool that ensures the success of any meeting and is a list of topics to be discussed with time limits. It is usually sent along with the notice of the meeting. The meetings are usually planned for important discussion. As it should be a collective effort towards a goal, everyone in meeting must know the agenda of the meeting.

Advantages of well written agenda:

- It helps the convener to know what needs to be accomplished out of each topic
- The participants are well prepared for discussion
- It prevents the meeting from going out of track, saves time and energy to focus on purpose of the meeting.
- It acts as road map for smooth flow of ideas to be discussed in meeting.
- If the agenda is floated in advanced, the members can request to add any topic which is not mentioned but relevant to the purpose of the meeting.

List of points to be taken care of while writing an agenda:

- Follow a simple format that consist of a heading and main body.
- The heading consist of name of organization, name of meeting, venue and starting and ending time
- The main body must have the list of all topics to be discussed, along with individual time allotted to each topic.
- The list of topics must be arranged and allotted time according to the importance. You must keep more important points on top of the list so that enough justice is given to them.
- The action points must be written clearly, whether you want to discuss, develop or take decision.
- Send the agenda in advanced to all who are going to attend the meeting.

Minutes of meeting:

The minutes of meetings is a detailed record of meeting. It includes the name of members, list of all who attended a meeting, the discussion that happened on each topic as per agenda, decisions taken, approvals (if any). Clear action points decided in the meeting are noted down in the minutes of meeting. Thus, it acts as a guidance to future actions and decisions.

TECHNICAL DESCRIPTION:

INTRODUCTION:

In engineering education and industry, we come across many equipment, objects and mechanism. In the teaching learning process, it is necessary to describe the construction, principle and working of these devices for the understanding of the teachers and students.

In case of an industry, these concepts are necessary for the trainers and trainees, both. This description is quite different than operating instruction manual. There, the instructions are given to operate the equipment or use the instrument.

For example, when a microprocessor, a microcontroller or a programmable logic controller (PLC) is to be studied, it is necessary to study the internal details of the device. The technical description explains all these details. Similarly in chemical, fertilizer, petrochemical, pharmaceutical industries and in general in all the industries, some product is developed. Starting from the raw material to the finished product, number of stages may be involved. At each stage, some process may be involved. The process may be thermal, chemical, electrical, mechanical, hydraulic, pneumatic or any other type of process.

For understanding of the process by the students, teachers, technicians and engineers, the description of the process is necessary. Without understanding the process, it cannot be controlled and quality of the product cannot be ensured. While describing the product or a process, the level of target group should be kept in mind. For technical persons of the same area, technical details are appreciated. For others, it should be simplified.

The technical description may be related to some research work, new development in the technical field, specific work done by some technocrat, a product, a problem solving methodology, some innovative approach, technical job experience, contribution by a scientist or an engineer, tools, techniques, equipment, or improvement in methodology. Technical description gives detailed information about constructional features, composition, appearance, shape, size, working principle and actual working.

Higher level of technical description may result in the following forms.

- Technical article in a technical publication.
- Brochure: It covers the details about a technical event by students, training activity, technology conference, technical workshop or a technical exhibition.
- Report: Detailed description of an activity or some major equipment may be in the report form. The reports may convince the readers about the merits of the product, a process or a plant.
- Leaflet: It covers the detailed description about the instrument or some equipment, along with technical specifications. It is targeted at probable customers. It also helps the agents, to sell the product.

- Manuals: Technical manuals help the users to utilize the equipment in a proper way. It is useful for the domestic consumers and the operators in the industry. It also helps the service engineers, in maintaining the equipment.
- Technical description is a description of an object, a product or a process. It describes the construction and also, how it works.
- Before description, some of the five senses are used to collect the details if possible, measurements are taken. The change of motion is described with a specific context. Related diagrams, photographs, videos, graphs and information from experts may be useful in the description.
- Shape, size, material and appearance of the equipment can be described.
- The working principle and actual working are described.
- Sequence of description is based on construction or operations.
- When the description is for public awareness or marketing purpose, the best organizational strategy may be considered.
- Concrete details and precise information language are used.

OBJECT DESCRIPTION:

- Object description starts with introductory part, defining the object, scope and purpose of the description.
- The construction and working of the parts is arranged in a sequence decided by the construction, the function or a chronological sequence. If the parts are numbered, the description may follow numerical sequence.
- In summary, overall construction, working and design features are highlighted.

PROCESS DESCRIPTION:

- Introductory part defines the process, scope and purpose of description.
- Initially the process is overviewed in brief. Necessary background is covered. The process is divided into various parts.
- At a time, one part of the process is defined, its purpose is stated. If necessary, further subparts of the process are described to explain it.
- One by one, all parts or steps of the process are explained.
- In summary, complete cycle of the process is reviewed and outcome of the process is highlighted.
- This process description makes the reader aware about the whole process. If the reader has to carry out the process himself, he requires a different set of instructions.

The technical description may be in the form of operational manual, product specifications or marketing/sales literature. The operational manual dispatched with the product, helps the user to

install, operate, service and maintain the product. It highlights the technical features and capabilities of the product.

Product specifications cover the constructional and operational features. It may be supported by diagrams, graphs, numerical data and circuit diagram for electrical and electronic products.

Sales literature is for promoting the sales of product. It is in the form of letters, brochure, or proposal. Depending on the target readers, it may cover technical details, as well as, application and commercial aspects.

GUIDELINES FOR TECHNICAL DESCRIPTION:

A specific topic is selected or assigned by somebody. The topic may be related to a machine, equipment, instrument, process, technology, design or a methodology. The probable target group is identified. The target group may have specific requirement. Students have theoretical or conceptual requirement. The customers require the information that will help them in the purchase decision. The retailer or an agent requires it for sales promotion. The government may require the description to monitor the import and export of goods. One such format is as follows.

Details of Technical Description:

- Type of equipment: Mechanical, electrical, electronic, etc.
- Materials of Construction: Steel, wood, glass, fiber, etc. In case of electronic components active, passive, MOS, CMOS, etc. may be mentioned.
- Working of equipment, nature of input, output and method of measurement.
- Schematic diagram, and detailed diagram or photograph, showing the construction of the equipment. In case of electrical or electronic system complete circuit diagram is required.
- Application of the equipment.
- Shape, size, dimensions and volume.
- If the equipment is used as part of some major equipment or a system, it should be explained.
- Part number can also be specified.

SUGGESTIONS FOR EFFECTIVE TECHNICAL DESCRIPTIONS

(i) Appearance or composition of equipment, object, substance, mechanism, organism or system can be described by anticipating queries from the users, purchasers or readers.

(ii) The purpose and use of the technical description also helps in deciding the details.

(iii) The technical description may be related to field study, scientific research, operating manual, orientation and training, product description, marketing, promotion, public awareness or education.

- (iv) Considering audience background, need and expectations, the material can be prepared.
- (v) The description may be subdivided according to structural parts or functional parts. Physical characteristics of each one can be covered.
- (vi) The description should be precise, with concrete words.
- (vii) Diagrams, photographs, layouts, circuit diagrams, cross section views and blue prints are useful in the illustration.
- (viii) The description may start with definition, purpose statement or objective of the document.
- (ix) The description may proceed from top to bottom or left to right of the equipment or from the innermost to the outermost part or the outermost to innermost part. Some components may have more functional importance. The sequence may also be decided by functional priority.
- (x) Finally, the overall construction and working may be explained.

COMPONENTS OF TECHNICAL DESCRIPTION:

- **Introduction:** Object, product, mechanism or process to be described is identified. Necessary background required by the reader is covered. General description of object, product, mechanism or process is given. The whole technical description is overviewed.
- **Background:** The related information to understand the description is covered. Some new information may be given. The description may be targeted at experts or non-experts.
- **Parts:** The object is divided into different physical parts and explained accordingly, in proper sequence.
- **Characteristics:** The important features of the equipment or process are highlighted.
- **Visuals:** With the help of visuals, the information is clarified. Necessary illustrations are given. The key points are highlighted. Important information is emphasized and the various points are properly linked. Visuals help in drawing audience attention, make the description more authentic, help the audience in content retention and by multimedia reach a larger group.
- **Description:** The details of description are decided by the user's need. It should employ all the five senses of the users. It is organized depending on the subject and users' need. It is a series of small descriptions.
- **Strategy:** The description may proceed from general to specific or specific to general.
- **Spatial Organization:** This type of description is based on physical location and is useful for description of parts of the equipment.
- **Chronological organization:** The events in a process can be described as per the sequence of occurrence.
- **Headings:** The description of various parts or sub processes is covered by different paragraphs with specific headings. It guides the reader in reading.

- **List of Parts:** Some equipment may have large many components. In diagrams the parts are labeled and description keeps track of the list.
- **Warnings:** In use of the equipment, some precautions are mentioned for the safety and security of the equipment, instrument and user or an operator.
- **Objectivity:** The judgment about the quality of the product or process should be left to the users.
- **Usability:** The technical description should ensure that it can be used and understood by the reader without any cross reference and will serve the purpose of the target group.