Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL/MAY 2025

COMMON FOR ALL BRANCHES
Semester II
HS 5253 PROFESSIONAL COMMUNICATION
(Regulation2019)

Time:3hrs Max.Marks: 100

CO1	Improve the relevant language skills necessary for professional communication.
CO2	Develop linguistic and strategic competence in workplace context.
CO3	Enhance language proficiency and thereby the employability of budding engineers and technologists.
CO4	To write effective job applications along with detailed CV for internship or placements.
CO5	To explore definitions, essay and report writing techniques and practice them in order todevelop associated skills.

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	**Below are two statements. Convert the statement into questions using words like Where, Why, What etc . (2x 1= 2)** a) The research findings suggest a significant correlation between sleep patterns and cognitive performance. b) The Eiffel Tower is located in Paris, Franc	2	1	L2
2	**The following passage has has four grammatical errors in it identify the error and correct them. (4 x ¼=2)** She don't like to go to the park because it's too far away. He enjoys reading books, but he don't have much time for it. They was planning to go to the movies, but they changed their mind at the last minute. I am really excited for the concert next weekend.	2	1	L3
3	**Combine the words in the two columns to form compound nouns and use them to fill the gaps in the following sentences below . (4 x 1/2 = 2)** **A** | **B** **Lap, smart, flash, web** | **phone, light, site ,top** a) My _____ is very powerful, and I use it for coding every day. b) The company is launching a new _____ next month. c) The _____ stopped working during the storm. d) I need to buy a new _____ because mine is broken.	2	1	L1
4	**Expand any two of the given acronyms. (2x 1= 2)** a) GPS b) HTML c) HTTP d) Mbps	2	3	L1
5	**Rewrite the following sentences in the passive voice (2x 1= 2)** a) The headmaster called his parents to the office. b) Your impolite tone surprises me.	2	1	L2

6	**Rewrite the sentences given below into Direct Speech (2 x 1=2)** a) Sujatha said, "I will complete the project by tomorrow." b) "Please help me with this task," Karthick requested.	**2**	1	L2
7	**Fill in the blanks using words given below in the box (4 x 1/2 = 2)** Moreover/ because/ firstly/ to conclude/ nevertheless/ despite Teamwork is a crucial skill in any professional setting._____, it helps individuals combine their strengths to achieve common goals. Working in a team encourages collaboration and the exchange of ideas._, it allows members to learn from one another's experiences and perspectives. Conflicts may arise occasionally; _____, these challenges can often lead to innovative solutions when handled effectively._____, successful teamwork fosters a sense of unity and improves overall productivity.	**2**	4	L1
8	**Fill in the blanks with the correct form of the verb given in the bracket. (4 x 1/2 = 2)** a) She_____(read) a book every evening before going to bed. b) I_____(watch) a movie right now, can I call you later? c) The students_____(complete) their assignments before the deadline yesterday. d) By the time we arrived, the train_____(leave)	**2**	1	L2
9	**Use any two of the following words given below, in the sentence of your own. (2 x 1=2)** a) Process b) Algorithm c) Output d) Computer	**2**	4	L6
10	**Read the following conversation between 2 friends on the importance of updating resume.** Person A: Hey, I've been meaning to ask you—when was the last time you updated your resume? Person B: Actually, it's been a while. I haven't really needed it recently. Why do you ask? Person A: Well, I think it's really important to keep it updated, evenif you're not actively job hunting. You never know when an opportunity might come up. Person B: That's true. I guess it's also good to have everything ready if someone asks for it, like for a promotion or a new project. Person A: Exactly! Plus, it's a good chance to reflect on your achievements and skills. It helps you stay aware of your career growth. Person B: I see your point. I should probably update mine with the new certifications and projects I've worked on this year. **Choose any TWO of the questions given below and answer them based on the communication given above. (2 x 1=2)** a) Why does Person A think it's important to update a resume regularly?	**2**	3	L2

	b) What are some reasons Person B might need their resume updated? c) How can updating a resume help with career growth? d) What specific things does Person B plan to update on their resume?			

PART- B(5x 13=65Marks)

(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	**Given below are some details about our former President Dr. APJ Abdul Kalam. Develop the hints to form a short bio note about him. (200 words).** Dr. APJ Abdul Kalam was born on October 15, 1931, in Rameswaram, Tamil Nadu.- came from a modest background - passion for learning- aerospace engineering degree at the Madras Institute of Technology (MIT)-worked for ISRO and DRDO- ground-breaking contributions to India's missile development- his role in the successful launch of India's first satellite launch vehicle and the development of Agni and Prithvi missiles- played a critical role in making India a nuclear power with successful tests during Pokhran II in 1998- 2002-Dr. Kalam was elected the 11th President of India, serving until 2007-youth empowerment and innovation in science and technology. He set forth a vision for a developed India by 2020.	13	3	L3
	OR			
11 (b)	**Given below are some details regarding , Dr Tessy Thomas. Develop the hints to form a short bio note about him. (200 words).** Tessy Thomas – 1963 – Alappuzha, Kerala – B.Tech Electrical Engineering – Government Engineering College, Thrissur – M.Tech in Guided Missiles – Defence Institute of Advanced Technology (DIAT), Pune – MBA in Operations Management – Ph.D. in Missile Guidance – joined DRDO (Defence Research and Development Organisation) – 1988 – known as "Missile Woman of India" – first woman to lead a missile project in India– played keyroles in Agni missile series – project director for Agni-IV and Agni – enhanced India's strategic defense capabilities – awards – Lal Bahadur Shastri National Award, DRDO Scientist of the Year, honorary doctorates — advocate for women in STEM — perseverance and dedication – known for leadership – innovation – commitment to excellence – inspires young scientists – mentors women in science – humility and dedication.	13	3	L3
12 (a)	**Read the following article on Global Warming: A change and write a short summaryof the article not exceeding 100-200 words.** Global warming refers to the long-term rise in Earth's average temperature due to human activities, primarily the emission of greenhouse gases like carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These gases trap heat in the atmosphere, preventing it from escaping into space, a phenomenon known as the greenhouse effect. While natural factors such as volcanic eruptions and variations in solar radiation have played roles in climate changes over millennia, the rapid increase in temperature observed since the late 19th century is largely attributed to human activities	13	4	L2

Causes of Global Warming

The primary drivers of global warming are human actions, such as:

1. **Burning Fossil Fuels**: The combustion of coal, oil, and natural gas for energy production and transportation releases significant amounts of CO2 into the atmosphere.
2. **Deforestation**: Trees absorb CO2, but when forests are cleared for agriculture or urban development, the carbon stored in the trees is released, exacerbating the warming effect.
3. **Industrial Processes**: Many industrial activities, such as cement production, chemical manufacturing, and waste management, release greenhouse gases. The growth of industries has significantly increased CO2 emissions.
4. **Agriculture**: Livestock farming, especially cattle, produces large amounts of methane, a potent greenhouse gas. Agricultural practices also contribute to deforestation and soil degradation.

Effects of Global Warming

The impacts of global warming are far-reaching, affecting ecosystems, weather patterns, and human societies in various ways:

1. **Rising Temperatures**: The global temperature has increased by about 1°C (1.8°F) since the late 19th century. This may seem small, but it has had significant effects on weather patterns.
2. **Melting Ice and Rising Sea Levels**: The warming atmosphere causes ice sheets in the Arctic and Antarctic to melt. This, in turn, leads to rising sea levels, which can submerge coastal cities, displace communities, and damage infrastructure.
3. **Extreme Weather Events**: Global warming has been linked to more frequent and severe weather events, such as hurricanes, floods, and droughts. Warmer oceans fuel stronger storms, and changing weather patterns can result in prolonged droughts or excessive rainfall.
4. **Ecosystem Disruption**: Changes in temperature and weather patterns disrupt ecosystems and threaten biodiversity. Many species may face extinction as they cannot adapt quickly enough to changing conditions, such as altered food availability and habitat loss.
5. **Health Risks**: Rising temperatures contribute to the spread of diseases carried by insects, such as malaria and dengue fever. Increased heatwaves can also directly impact human health, leading to heatstroke and respiratory issues.

Mitigation Strategies

Addressing global warming requires concerted efforts from governments, businesses, and individuals. Several strategies are being employed to mitigate its effects:

1. **Reducing Greenhouse Gas Emissions**: Transitioning from fossil fuels to renewable energy sources like solar, wind, and geothermal is crucial. Increased energy efficiency in industries and buildings can also significantly reduce emissions.
2. **Afforestation and Reforestation**: Planting trees to absorb CO2 is one of the most effective ways to combat global warming. Forest conservation efforts are essential in preventing the release of stored carbon.
3. **Sustainable Agriculture**: Adopting sustainable farming techniques, such as reducing the use of chemical fertilizers, improving soil health, and minimizing methane emissions from

	livestock, can help reduce agricultural contributions to global warming. 4. **International Agreements**: Global cooperation is vital in addressing climate change. Agreements like the **Paris Agreement** aim to limit global temperature rise to well below 2°C compared to pre-industrial levels. Countries have pledged to reduce emissions and invest in clean energy technologies. **Adaptation Measures** While mitigation is essential, adaptation is equally important. Societies must prepare for the unavoidable effects of global warming. Some adaptation strategies include: 1. **Building Resilient Infrastructure**: Constructing buildings and infrastructure that can withstand extreme weather events, such as floods and hurricanes, is crucial for reducing the impact of climate change. 2. **Water Management**: Efficient water use and management systems are necessary to deal with droughts and floods caused by changing weather patterns. 3. **Climate-Resilient Agriculture**: Developing crops that can survive in warmer, drier conditions and improving irrigation systems are essential for maintaining food security. 4. **Health Systems Strengthening**: Preparing healthcare systems to cope with the effects of climate change, including the spread of diseases and heat-related illnesses, is a crucial step toward adaptation. **Conclusion** Global warming is one of the most pressing issues of our time, requiring urgent action. While the effects of global warming are already being felt across the globe, there is still time to mitigate its most severe consequences. By reducing greenhouse gas emissions, investing in renewable energy, protecting forests, and adopting sustainable practices, we can work towards a healthier, more sustainable planet for future generations. However, this requires global cooperation and commitment from all sectors of society.			
	OR			

12 (b)	**Read the following article on E-Vehicle: A promising fuel for India's sustainable future. Write a short summary of the article not exceeding 100-200 words.**	**13**	4	L2

Introduction

In recent years, the world has witnessed a significant shift towards **electric vehicles (EVs)** as an alternative to traditional gasoline and diesel-powered cars. As the threat of climate change grows, the demand for clean, sustainable, and eco-friendly transportation solutions has surged. Electric vehicles, powered by electricity stored in rechargeable batteries, offer a promising solution to reduce greenhouse gas emissions, improve air quality, and decrease dependence on fossil fuels. This article explores the benefits, challenges, and future of electric vehicles, shedding light on their importance in the transition to a greener, more sustainable future.

Understanding Electric Vehicles

Electric vehicles are vehicles that run on one or more electric motors, which are powered by electricity stored in batteries. Unlike traditional vehicles, which rely on internal combustion engines fueled by gasoline or diesel, EVs are powered by electrical energy. This energy is typically stored in large, high-capacity batteries, which are charged using electricity from the grid or other sources like solar panels.

There are three main types of electric vehicles:

1. **Battery Electric Vehicles (BEVs)**: These vehicles run entirely on electricity and do not use any form of fuel. They are charged via an external electric power source, such as a charging station or home charger.
2. **Plug-in Hybrid Electric Vehicles (PHEVs)**: PHEVs combine an internal combustion engine with an electric motor. They can be charged via an electric power source and switch to gasoline when the battery runs out of charge.
3. **Hybrid Electric Vehicles (HEVs)**: These vehicles are similar to PHEVs but cannot be plugged in. Instead, they rely on the internal combustion engine to recharge the battery while driving.

Benefits of Electric Vehicles

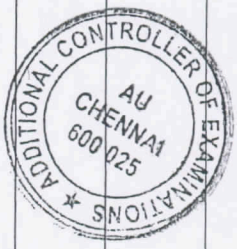
1. **Environmental Benefits**: One of the most significant advantages of EVs is their **environmental impact**. Since they do not emit tailpipe pollutants like nitrogen oxides (NOx) or carbon dioxide (CO2), EVs help reduce air pollution, particularly in urban areas. This leads to improved air quality and a decrease in respiratory and cardiovascular diseases linked to air pollution. Moreover, by reducing greenhouse gas emissions, electric vehicles contribute to mitigating climate change and reducing global warming.

2. **Reduced Dependence on Fossil Fuels**: Traditional vehicles rely on fossil fuels like gasoline and diesel, which contribute to air pollution and are finite resources. EVs, on the other hand, run on electricity, which can be generated from a variety of renewable energy sources, such as wind, solar, and hydropower. This reduces the need for oil and helps diversify the energy supply, making the transportation sector more sustainable.
3. **Lower Operating Costs**: Electric vehicles tend to have lower operating costs compared to traditional vehicles. They have fewer moving parts, meaning less maintenance is required. For instance, EVs do not need oil changes, and their brake systems tend to last longer due to regenerative braking, which recovers energy during braking. Additionally, the cost of electricity to charge an EV is typically lower than the cost of gasoline or diesel, resulting in long-term savings.
4. **Energy Efficiency**: Electric motors are far more efficient than internal combustion engines in converting energy into motion. While traditional engines are only about 20-30% efficient, electric motors can convert up to 90% of the energy from the battery into movement. This makes EVs significantly more energy-efficient and cost-effective.
5. **Quiet and Smooth Operation**: Electric vehicles offer a much quieter and smoother driving experience compared to gasoline-powered cars. The absence of a noisy internal combustion engine means less road noise, which leads to a quieter, more comfortable ride for drivers and passengers alike.

Challenges Facing Electric Vehicles

Despite their many benefits, electric vehicles still face several challenges that hinder their widespread adoption:

1. **Limited Range**: While the range of electric vehicles has improved significantly in recent years, many EVs still have a limited driving range compared to traditional vehicles. Most BEVs currently offer a range of 150-370 miles on a full charge, which may not be sufficient for long-distance travel, particularly in regions with limited charging infrastructure.
2. **Charging Infrastructure**: The availability of charging stations is still a major concern for potential EV buyers. While charging infrastructure is growing, it is not yet as widespread as gas stations, particularly in rural areas. The lack of fast-charging stations can also make long trips inconvenient, as charging times can range from 30 minutes to several hours depending on the charger and battery size.
3. **High Purchase Price**: Although the price of electric vehicles has been steadily decreasing, EVs are still generally more expensive than their gasoline counterparts. The high cost is primarily due to the expensive batteries used in electric vehicles. However, with advances in battery technology and economies of scale, prices are expected to fall, making EVs more affordable in the near future.



4. **Battery Life and Recycling**: While EV batteries are designed to last for many years, their capacity gradually diminishes over time. Replacing a battery can be expensive, and the environmental impact of disposing of old batteries is a concern. Recycling and reusing EV batteries are critical challenges that need to be addressed to ensure that the environmental benefits of EVs are not offset by battery waste.

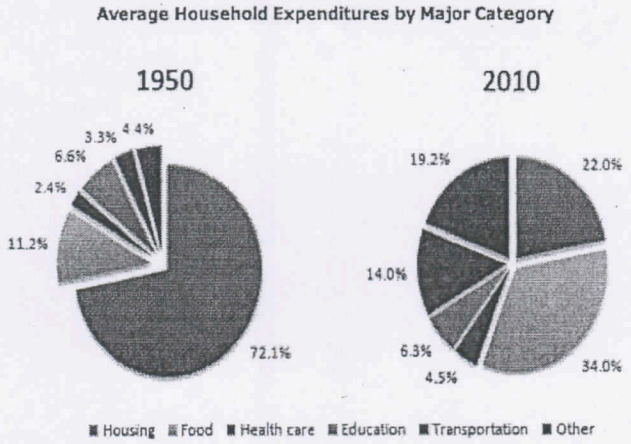
The Future of Electric Vehicles

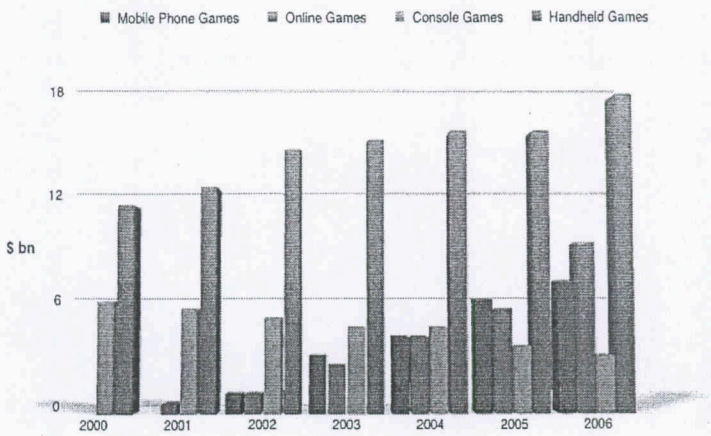
The future of electric vehicles looks promising, with rapid technological advancements and increasing governmental support. Many countries are setting ambitious goals to phase out gasoline and diesel vehicles in favor of electric ones. For example, the European Union has set a target to make all new cars sold in the region zero-emission by 2035. Similarly, several U.S. states, including California, are planning to ban the sale of new gasoline-powered vehicles by 2035.

Technological advancements are also addressing some of the current challenges faced by EVs. The development of **solid-state batteries**, which are safer, more efficient, and have a higher energy density, could significantly increase the range of electric vehicles and reduce charging times. Additionally, improvements in **fast-charging technology** are making long-distance travel in EVs more feasible.

Conclusion

Electric vehicles represent a critical step towards creating a sustainable and eco-friendly future. Their environmental benefits, reduced dependence on fossil fuels, lower operating costs, and energy efficiency make them a promising solution to the growing climate crisis. While challenges such as limited range, high upfront costs, and the need for more charging infrastructure remain, the continued advancement of technology and the push for global environmental policies will drive the widespread adoption of electric vehicles. As we move towards a greener and cleaner future, EVs are poised to play a pivotal role in transforming the way we think about transportation, offering a cleaner, quieter, and more sustainable alternative to traditional vehicles

13 (a)	Your cousin has purchased a laptop and is excited to use it. **Write a set of 12 instructions to be kept inmind while using laptop.** Write a suitable title.	**13**	2	L4
	OR			
13 (b)	Imagine you are the Student President of your college. You are in charge of organising the Sports Dayin your college. You have invited the Director General of Police as Chief Guest for the Prize Distribution Ceremony. **Write a set of 12 instructions to be kept in mind for the smooth conduct of the ceremony.** Write a suitable title	**13**	2	L4
14 (a)	**The pie chart below shows the average household expenditure between 1950 to 2010 Interpret the data given in the pie chart below (200 words).**  	**13**	3	L4
	OR			

14 (b)	**The chart shows the global sale of different kinds of digital games from 2000 to 2006 . Interpret the data given in the given bar graph (200 words).**  	13	3	L4
15 (a)	**Write a cover letter and the Curriculum Vitae for the advertisement given below.** **1. Junior Mechanical Engineer** **Company:** XYZ Engineering Solutions **Location:** San Francisco, CA **Job Type:** Full-time **Job Description:** XYZ Engineering Solutions is looking for a motivated and talented Junior Mechanical Engineer to join our team. The ideal candidate will have a strong foundation in mechanical engineering principles and a passion for applying them to real-world challenges. As a Junior Mechanical Engineer, you will work alongside experienced engineers on a variety of projects in industries such as manufacturing, aerospace, and automotive.	13	5	L6
	OR			

15 (b)	**Write a cover letter and the Curriculum Vitae for the advertisement given below.** . **Software Engineer - Graduate Program** **Company:** TechInnovate Solutions **Location:** Remote **Job Type:** Full-time **Job Description:** TechInnovate Solutions is seeking recent graduates to join our Software Engineering Graduate Program. We are looking for enthusiastic engineers with a strong foundation in computer science and a passion for software development. You will be trained and mentored by senior engineers to work on exciting projects using the latest technologies. This is a fantastic opportunity to build your career in software engineering with a fast-growing company. **Responsibilities:** • Write clean, maintainable code in languages such as Java, Python, or C++ • Collaborate with cross-functional teams to design and implement software solutions	13	5	L6

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	**Read the given passage and answer the questions that follow.** The Role of Emerging Technologies in Modern Engineering Engineering is a broad field that continues to evolve with the advent of emerging technologies. These innovations are transforming industries, making systems more efficient, and paving the way for new solutions to old problems. Modern engineering is no longer confined to traditional practices; it now incorporates cutting-edge developments in artificial intelligence (AI), machine learning, robotics, 3D printing, and nanotechnology. These technologies are reshaping engineering processes and creating new opportunities for engineers to explore.	15	4	L6

	One of the most significant breakthroughs is **artificial intelligence (AI)**. AI is revolutionizing how engineers design, test, and optimize systems. Through algorithms that mimic human decision-making processes, AI can predict performance, detect errors, and suggest improvements during the design phase. In addition, AI helps in predictive maintenance, where machine learning models predict equipment failures before they happen, reducing downtime and maintenance costs. Engineers are now using AI in a variety of applications, from designing sustainable buildings to creating more energy-efficient vehicles. **Robotics** is another technology that has made a profound impact on engineering. Robots are being increasingly used in manufacturing, construction, and even healthcare. In factories, robotic arms and automated systems are used to perform repetitive tasks, improving precision and efficiency. In construction, robots are assisting in building structures that are safer and more sustainable, as well as reducing human labor in hazardous environments. In healthcare, robots are used in minimally invasive surgeries, helping surgeons perform procedures with greater accuracy. **3D printing**, or **additive manufacturing**, has also emerged as a game-changer for engineers. 3D printing allows engineers to design and produce prototypes quickly and at a lower cost compared to traditional manufacturing methods. Materials used in 3D printing are versatile and include metals, plastics, and even biological materials. This technology is also making it possible to create complex geometries and customized parts that would be difficult, if not impossible, to make using conventional methods. In aerospace and automotive industries, 3D printing has been used to create lightweight components that improve performance and reduce costs. Finally, **nanotechnology** is paving the way for advancements in materials science. At the nanoscale, engineers can manipulate materials at the atomic or molecular level, creating substances with enhanced properties, such as greater strength, flexibility, or conductivity. Nanomaterials are used in a variety of engineering applications, from manufacturing ultra-durable materials to creating more efficient solar panels. The ability to control matter at such a small scale holds great promise for future innovations in energy, electronics, and biotechnology. With the rapid growth of these technologies, engineers need to continually update their skills and knowledge. This is why lifelong learning is essential for anyone pursuing a career in engineering. Universities and professional organizations now offer specialized programs that focus on the latest technological advancements in engineering fields. For instance, students can now pursue degrees in fields like robotics engineering, sustainable energy, and nanotechnology, which were virtually unheard of a few decades ago. The integration of these technologies is not without challenges, though. Ethical concerns, safety issues, and the potential for job displacement are just a few of the issues that need to be addressed as			

these technologies become more widespread. Engineers must work alongside policymakers, business leaders, and other stakeholders to ensure that these innovations are used responsibly and for the benefit of society. As these technologies continue to evolve, the future of engineering will be shaped by those who are not only technically skilled but also aware of the broader implications of their work.

Comprehension Questions :

1. Emerging technologies like AI, robotics, and 3D printing have no significant impact on engineering industries. (True/False)
2. AI can be used in engineering for predictive maintenance and to reduce downtime. (True/False)
3. Robots are only used in manufacturing and have no applications in healthcare. (True/False)
4. 3D printing is more expensive and slower compared to traditional manufacturing methods. (True/False)
5. Nanotechnology helps in creating materials with enhanced properties, such as greater strength or conductivity. (True/False)

Choose the contextual meaning of the given options:

1. **Optimize**
   - a) To create something by combining materials in specific ways.
   - b) To make something as effective or functional as possible.
   - c) To use a machine or robot to perform tasks.
2. **Additive Manufacturing**
   - a) A method of production where materials are built up layer by layer.
   - b) The process of repairing old manufacturing equipment.
   - c) A traditional method of subtracting material to form shapes.
3. **Predictive Maintenance**
   - a) A maintenance approach where engineers predict equipment failure before it occurs.
   - b) A process used for designing buildings.
   - c) A technique used to repair machinery after it fails.
4. **Nanomaterials**
   - a) Materials that have been scaled down to a molecular or atomic level for engineering applications.
   - b) Materials used for building large structures.
   - c) Materials that are non-conductive and environmentally harmful.
5. **Lifelong Learning**
   - a) Continuous education and skill development throughout one's career.
   - b) Training that lasts for a set duration.

	○ c) Learning a skill once and applying it for the rest of one's career. **Fill in the Blanks with a Articles (a, an, or the):** 1. ____ integration of emerging technologies is changing the face of engineering. 2. Engineers must constantly update their knowledge of ____ latest advancements. 3. ____ AI algorithms are designed to mimic human decision-making processes. 4. In healthcare, ____ robotic systems assist surgeons during procedures. 5. Nanotechnology has applications in ____ creation of materials with special properties.