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Question Paper Code : 81875

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

Seventh/Ninth Semester

Computer Science and Engineering

OHS 352 — PROJECT REPORT WRITING

(Common to: Aeronautical Engineering/Aerospace Engineering/Automobile Engineering/Biomedical Engineering/Civil Engineering/Civil Engineering (Tamil Medium)/Computer Science and Design/Computer Science and Engineering (Artificial Intelligence and Machine Learning)/Computer Science and Engineering (Cyber Security)/ Computer Science and Engineering (Tamil Medium)/Computer and Communication Engineering/Electrical and Electronics Engineering/Electronics and Communication Engineering/Electronics and Instrumentation Engineering/ Electronics and Telecommunication Engineering/Environmental Engineering/ Geoinformatics Engineering/Industrial Engineering/Industrial Engineering and Management/Instrumentation and Control Engineering/ Manufacturing Engineering/Marine Engineering/Material Science and Engineering/Mechanical Engineering/Mechanical Engineering (Sandwich)/ Mechanical Engineering (Tamil Medium)/Mechanical and Automation Engineering/Mechatronics Engineering/Medical Electronics/Petrochemical Engineering/Production Engineering/Robotics and Automation/Safety and Fire Engineering/Agricultural Engineering/Artificial Intelligence and Data Science/Bio Technology/Biotechnology and Biochemical Engineering/Chemical Engineering/Chemical and Electrochemical Engineering/Computer Science and Business Systems/Fashion Technology/Food Technology/Handloom and Textile Technology/Information Technology/ Petrochemical Technology/Petroleum Engineering/Pharmaceutical Technology/ Plastic Technology/Textile Chemistry/Textile Technology)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Change the voice of the following sentences: (2 × 1 = 2)
 - (a) The project evaluates the effectiveness of different waste-management practices followed by the urban industries.
 - (b) The recommendations were formulated based on the findings and customer feedback.

2. Rewrite the following dialogue in a reported writing format : $(2 \times 1 = 2)$

Ravi : I have completed the descriptive statistics of the data I had collected but the patterns are still unclear.

Raj : Why don't you run a comparative analysis and check whether the variables correlate?

3. Choose the appropriate verb that is appropriate to the given subject :

$$(4 \times \frac{1}{2} = 2)$$

Anxiety _____ (lead/leads) to lack of self-confidence, low self-esteem and behaviors related to classroom language learning as it _____ (undermine/undermines) the competence of the students to participate in class discussion especially in the core subjects. Studies _____ (has shown/have shown) that as many as 16.4% of English secondary school pupils _____ (experience/experiences) test anxiety.

4. Fill in the blanks with suitable connectives from the given list of words :

$$(4 \times \frac{1}{2} = 2)$$

(Firstly, on the contrary, besides, however, as a result, in spite of this, otherwise, in addition)

The initial surveys conducted for a study on community-led water conservation showed that most families were aware of the importance of saving water; _____ many of them still used outdated methods that wasted large quantities. The team organized workshops in five villages; _____ they provided tools for measuring household water usage. Some villagers believed that rainwater harvesting would not make a significant difference; _____ the data collected during the pilot phase proved that the method reduced water shortages by nearly 30%. The research team also analyzed soil-retention techniques; _____, despite these efforts, farmers continued to use water-intensive crops during the frequent droughts.

5. Choose any two of the following and write a single-line definition : $(2 \times 1 = 2)$

- | | |
|-------------------------|------------------|
| (a) Research hypothesis | (b) Pilot study |
| (c) Plagiarism | (d) Bibliography |

6. How can a student avoid plagiarism while paraphrasing information from a research article? (2)

7. Mention any four items that have to be definitely included in an abstract of a research paper. $(4 \times \frac{1}{2} = 2)$

8. You want to conduct a study requiring lab equipment that your institution does not have. What should you consider in your feasibility section? (2)

9. Rewrite the following details in proper APA citation style : (2)

Title of the paper : The Learning Anxiety of the Students in the Context of the Basic Education.

Authors : Jo Ann Alindao, Eric B Catacio, Maria Fresanie, T Alay-Alay

Date : February 2022

Journal Title : World Journal on Education and Humanities Research

Vol.3, Issue 1, Pages 31-40

10. The following passage has spelling and grammar errors. Rewrite the passage after correcting the errors. ($8 \times \frac{1}{4} = 2$)

Construct validity is concerns with the extent to which a test measure a specific trait or construct. This type of validity was essential for those tests while are used to assess individuals on certain pschyological traits and abilities. Examples of common constructs are anxiety, intelligence, motivation, attitude, critical thinking etc. Construct validity is established on relating a presumed measure of a construct with some behaviour when it is hypothesized to underlie.

PART B — ($5 \times 13 = 65$ marks)

11. (a) Rearrange the following sentences in the right order and give an appropriate title to the passage :
- (i) These hydrocarbons also energize subsequent syntheses.
 - (ii) The malleability of plastics makes it possible to form them by casting, pressing, or extruding.
 - (iii) In contrast, thermoset plastics (including polyurethanes, polymides, melamine, and urea-formaldehyde) resist softening when heated.
 - (iv) Synthesis of plastics begins with monomers, simple molecules that can be bonded in long chains or branches to make polymers.
 - (v) Some thermoplastics combine low specific gravity (light weight) with fairly high hardness (durability).
 - (vi) Plastics are a large group of synthetic (or semisynthetic) organic materials whose common quality is that they are fit for forming (molding).
 - (vii) Low- and high-density polyethylene (PE) now account for more than 20 percent of the world's plastic polymers, polypropylene (PP) for about 15 percent, and polyvinyl chloride (PVC) for more than 10 percent.
 - (viii) The two key monomers, ethylene and propylene, are produced by the steam cracking (heating to $750 - 950^{\circ}\text{C}$) of hydrocarbon feedstocks

- (ix) This comparison shows that while the ultimate tensile strength of structural steel is 400 megapascals, polystyrene reaches 100 megapascals-twice that of wood or glass and only slightly lower than aluminium.
- (x) They create shapes ranging from thin film to heavy-duty pipes and from feather-light bottles to massive and sturdy waste containers.
- (xi) Globally, output has been dominated by thermoplastics _Polymers that often soften readily when heated and harden again when cooled.
- (xii) Durable aluminium weighs only a third as much as carbon steel, but PVC density is less than 20 percent and PP less than 12 percent compared to steel.

Or

(b) Rearrange the following sentences in the right order and give an appropriate title to the passage :

- (i) Once ready, iron ore pellets, coke, and limestone are loaded into the top of the blast furnace.
- (ii) After that, alloying elements may be introduced to produce steel with specific properties.
- (iii) These pellets are subsequently hardened through controlled heating and cooling to prepare them for the blast furnace.
- (iv) Finally, these semi-finished forms are reheated and rolled into finished products such as coils, plates, or structural shapes.
- (v) Consequently, the coke burns to create heat and carbon monoxide, which reduces the iron ore and separates iron from oxygen.
- (vi) Iron ore is first crushed into a fine powder and then pelletized with binders and water.
- (vii) The resulting molten pig iron is then tapped from the base of the furnace and transferred for refining.
- (viii) Meanwhile, coal is heated without air to produce coke, which serves as both fuel and a reducing agent.
- (ix) The molten steel is next poured into molds or sent through continuous casters to form slabs, billets, or blooms.
- (x) As the mixture descends, it is exposed to temperatures above 1500°C.
- (xi) In the refining furnace, oxygen is blown through the molten iron-often with scrap steel added-to remove excess carbon and other impurities.
- (xii) At the same time, the limestone combines with impurities to form slag that floats above the molten iron.

12. (a) Describe the structure of a project report, explaining the purpose of each section in not more than 250 words.

Or

- (b) Discuss plagiarism in the context of project report writing, explaining what constitutes plagiarism and how it can be avoided in not more than 250 words.

13. (a) Read the following problem statement and write the aim of the study, the background and the research question so that they align coherently :

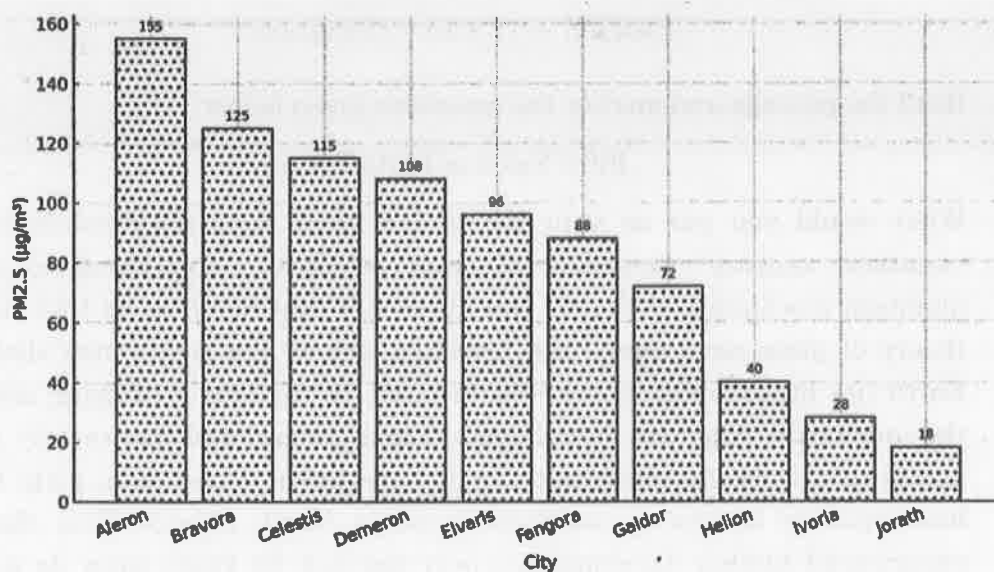
A college observes that many students perform poorly in their first-year mathematics course, and teachers suspect that inconsistent study habits may be a major factor.

Or

- (b) Describe what a theoretical framework is and explain how it guides a research study. Illustrate your answer by creating a simple example linking a theory to a research problem.

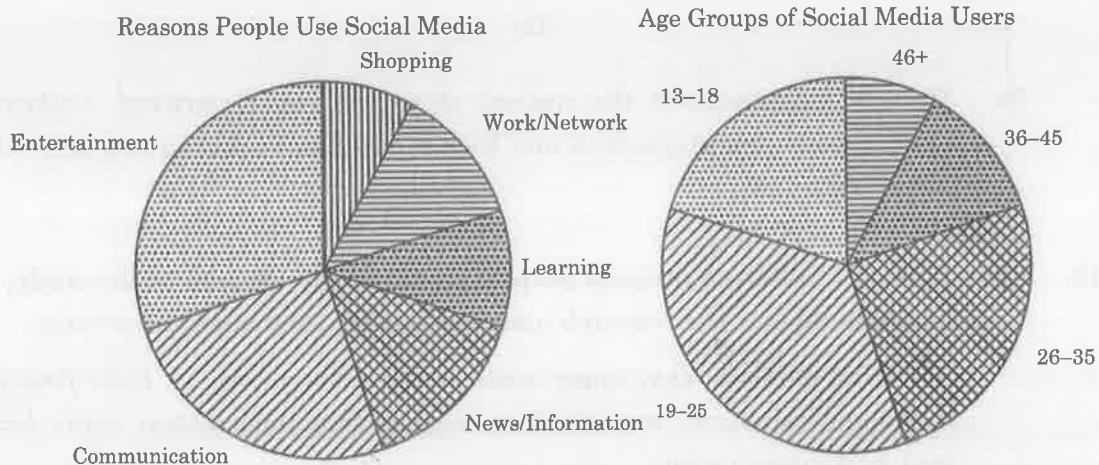
14. (a) The chart below shows the pollution levels of various cities. Describe and analyze the data, and provide recommendations for reducing the pollution levels in 200 words.

Fictional PM 2.5 Levels in Major Cities ($\mu\text{g}/\text{m}^3$)



Or

- (b) The pie chart below shows the social media usage by different age groups. Describe and analyze the data, and suggest measures to promote healthy and responsible social media use in 200 words.



15. (a) What are the different citation styles used in academic writing? Explain how they differ in terms of in-text citations, bibliography formatting, and overall structure and discuss why disciplines follow different citation styles.

Or

- (b) Describe how a report should be presented orally. Explain the preparation, structure, delivery techniques, use of visual aids and strategies for managing the audience and responding to questions.

PART C — (1 × 15 = 15 marks)

16. Read the passage and answer the questions given below :

Fifty Years of Plate Tectonics

What would you put on your list of the great scientific revolutions of the twentieth century? Genetics? General relativity? Something to do with quantum mechanics, perhaps? One discovery that must be on that list is the theory of plate tectonics – the principle of how the rigid outer shell of our Earth (its lithosphere) moves and recycles. It provides a unifying context for the previously disparate disciplines of Earth science and was rapidly accepted across the geological community in the late 1960s. Since then, plate tectonics has arguably become a standard model in Earth science. This theory has experienced further developments over the last 50 years since its advent in 1967 – 68.

Before the birth of plate tectonics theory, studying geology was essentially an exercise in collecting (apparently disparate) facts and memorizing information. Structural geology was concerned with descriptions and understanding deformation for its own sake. Geochemistry was simply to add information to descriptions of a myriad of different rock types, chiefly igneous. The sites where sedimentary rocks were accumulated were traditionally thought of as geosynclines that formed by mysterious processes. There was no emphasis on stratigraphy, geological time and environmental changes that had influenced the deposition of sedimentary rocks and the records of life they contained.

Plate tectonics is about the outer shell of the Earth being in a constant state of motion, albeit being slow. The old world view had overlooked horizontal motions of lithosphere. The idea that continents might have moved was hardly accepted before the 1960s. But all this had changed once seafloor spreading was confirmed and oceanic crust formation at ridges and destruction through subduction zones were demonstrated. And this is not random, but is geometrically and kinematically organized.

Truly great ideas in science not only seem elegantly simple and intuitive when they come into focus, but also have extraordinary powers to answer many other questions to our scientific understanding of the world. Plate tectonics is a perfect example of this. This theory provides an excellent framework to explain the present-day tectonic and seismic activities near the Earth's surface. However, its application to Earth processes in the geological past (300 million years ago) is not straightforward.

Thanks to courageous attempts and great efforts, the plate tectonics theory has been much advanced in the past 50 years. At its infancy, mantle convection was accepted as the driving force of plate motion. However, further studies indicate that gravitational sinking of the oceanic lithosphere at subarc depths plays a more important role in driving the motion of plates over the convective mantle. At its early time, only oceanic lithosphere was considered subductable whereas continental lithosphere was not because of its lower density. However, findings of coesite and microdiamond as crystal inclusions in metamorphic minerals led to the recognition of continental subduction to mantle depths.

Originally, lithospheric plates were assumed to be rigid in describing plate motion and plate boundary zone processes. Seismic belts are thus zones where differential movements between rigid plates occur. However, the plates may behave as elastic bodies that can accumulate considerable stresses along their boundaries before being relieved by earthquakes. Furthermore, their margins become significantly ductile at high temperatures, leading to mountain building along convergent plate boundaries. This has called for modification of the mechanical behavior of subducting plates at different depths.

In general, plate subduction results in mountain building with lithospheric thickening, giving rise to accretionary and collisional orogens as a result of compression. Afterwards, these thickened orogens were thinned and even destructed in post-subduction stages, which was originally regarded as the result from tectonism independently of plate tectonics. Nevertheless, mountain building also occurs in mid-ocean ridges, making the orogens of extensional style. Such orogens were thinned at first and then had superimposed on the orogens of compressional style with their reactivation for partial melting and lithospheric stretching. These tectonic processes are also the result of plate tectonics and thus collectively termed as rifting orogeny. This extensional tectonism is the herald of supercontinent breakup for the formation of a new ocean basin in a Wilson cycle.

Although many advances due to plate tectonics seem speculative at their beginning, they have been and continue to be verified with the application of advanced technologies to Earth science. This has also benefited from the integrated interpretations of multidisciplinary observations. The results are making an impact on the origin of igneous rocks and their relevant mineralization at ancient plate boundary zones.

(a) (i) Choose the right option based on the passage given above :

(5 × 1 = 5)

(1) In which decade was plate tectonics widely accepted?

- | | |
|-----------|-----------|
| (A) 1940s | (B) 1950s |
| (C) 1960s | (D) 1980s |

(2) What unified the previously disconnected branches of Earth Science?

- | | |
|------------------------|---------------------|
| (A) Stratigraphic laws | (B) Fossil dating |
| (C) Volcanic studies | (D) Plate tectonics |

(3) A geologist discovers deformation patterns caused by horizontal motion. Which concept from the passage best explains this?

- | |
|---------------------------------|
| (A) Meteorite impacts |
| (B) Mantle plumes |
| (C) Lithospheric plate movement |
| (D) Fossil dispersal |

- (4) Which shift in understanding changed views on the driving force of plates?
- (A) Recognition that friction between plates and the asthenosphere was the dominant force.
 - (B) Discovery that heat flow from the core directly pushes continents apart.
 - (C) Realization that volcanic eruptions supply enough upward force to move plates laterally.
 - (D) Acceptance that gravity-driven sinking of old oceanic lithosphere exerts a major pull on plates.
- (5) Which conclusion is most consistent with paragraph 8?
- (A) New technologies reinforced and validated earlier models.
 - (B) Early ideas stayed speculative and created more doubts.
 - (C) Older theories were completely abandoned.
 - (D) Observations became less reliable in spite of the empirical data.

(ii) Answer the following questions : (5 × 1 = 5)

- (1) State true or false – Geological time and environment were major emphases before plate tectonics.
- (2) State true or false – The recognition of continental subduction strengthened the theory of plate tectonics.
- (3) “Disparate disciplines” refers to fields that are –
 - (A) Closely related (B) Newly formed
 - (C) Abandoned (D) Unrelated
- (4) If an idea provides a “unifying context”, it –
 - (A) Connects multiple observations
 - (B) Limits multiple enquiries
 - (C) Replaces various evidences
 - (D) Rejects earlier studies
- (5) Which best reflects the tone of “courageous attempts and great efforts”?
 - (A) Sarcasm (B) Criticism
 - (C) Respect (D) Indifference

(iii) Write a short summary of the passage in not more than 150 words. (5)

Or

(b) (i) Choose the right option based on the passage given above :

(5 × 1 = 5)

- (1) Before plate tectonics, geology was largely an exercise in
 - (A) Collecting unrelated facts
 - (B) Predicting climate cycles
 - (C) Reconstructing ecosystems
 - (D) Mapping magnetic anomalies
- (2) You find rocks containing coesite and microdiamond. According to the text, what can you infer?
 - (A) Continental crust was dragged deep into the mantle.
 - (B) The rocks formed at shallow depths.
 - (C) The region is volcanic.
 - (D) The minerals formed during erosion.
- (3) Why did the rigid plate model need revision?
 - (A) Plate interiors became colder
 - (B) Plate showed elastic and ductile behaviour
 - (C) Volcanoes decreased globally
 - (D) Sedimentation rates fell
- (4) Which interpretation best reflects the author's view of extensional orogeny?
 - (A) It contradicts plate tectonics
 - (B) It is unrelated to mountain building
 - (C) It is linked to new ocean formation
 - (D) It occurs only after subduction completely stops
- (5) Based on the developments described, which future research direction is most reasonable?
 - (A) Revising the current ideas about subduction processes.
 - (B) Reassessing the role of mantle convection in plate motion.
 - (C) Studying how changes in plate rigidity shape tectonic evolution.
 - (D) Evaluating the limits of using cross-disciplinary evidence.

- (ii) Answer the following questions : (5 × 1 = 5)
- (1) State true or false – Plate tectonics provides context to various Earth science observations.
 - (2) State true or false – Ductile behavior at plate margins suggests that rigidity applies uniformly across all depths.
 - (3) “Infancy” in the phrase “at its infancy” means
 - (A) Declining stage
 - (B) Middle stage
 - (C) Peak stage
 - (D) Early stage
 - (4) In the sentence “*This extensional tectonism is the **herald** of supercontinent breakup...*”, the word **herald** most nearly means :
 - (A) A minor interruption with no consequences.
 - (B) An early warning or sign that something will follow.
 - (C) A final cycle in a long geological cycle.
 - (D) A sudden collapse of Earth’s crust due to tectonic plate movements.
 - (5) What is the overall tone of the author in the passage?
 - (A) Harshly critical of earlier geological ideas.
 - (B) Completely objective, with no indication of appreciation or approval.
 - (C) Appreciative and respectful of scientific progress over time.
 - (D) Humorous and light-hearted about geological discoveries.
- (iii) Assess whether the passage portrays plate tectonics as a static or evolving theory. Support your answer with evidence from the passage in not more than 150 words. (5)
-

1. The first part of the paper is devoted to a general discussion of the problem of the existence of a solution of the system of equations (1) for arbitrary values of the parameters α and β . It is shown that the system has a solution if and only if the conditions (2) are satisfied.

2. In the second part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

3. In the third part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

4. In the fourth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

5. In the fifth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

6. In the sixth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

7. In the seventh part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

8. In the eighth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

9. In the ninth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.

10. In the tenth part of the paper the problem of the construction of a solution of the system (1) for arbitrary values of the parameters α and β is solved. It is shown that the system has a solution if and only if the conditions (2) are satisfied.