

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF INDUSTRIAL TECHNOLOGY

DEPARTMENT OF TECHNICAL TEACHER EDUCATION

SUPPLEMENTARY EXAMINATION

DESIGN AS A TYPE OF INQUIRY

TTE 3121

PART III

FEBRUARY 2010

TIME: 3 HOURS

100 MARKS

INSTRUCTIONS AND DIRECTIONS TO CANDIDATES

1. Answer **FOUR** questions from this paper.
2. Each question carries 25 marks. Subdivision marks are shown in brackets.
3. Start each answer on a new sheet of paper.
4. Drawings / illustrations must be done on plain A4 drawing / tracing paper provided.
5. Candidates are to bring drawing instruments, pencils, pencil crayons and black pens.

QUESTION 1

- (a) Explain the following research practices with examples from any research you have done:
- (i) Methodology
 - (ii) Research management
 - (iii) Research funding
 - (iv) Public engagement [16 marks]
- (b) Explain with reasons **THREE** ways that would assist to produce effective and rigorous research. [9 marks]

QUESTION 2

Explain with examples the importance of the following in research design:

- (a) creativity
- (b) problem solving
- (c) customer involvement
- (d) innovativeness
- (e) models

[25 marks]

QUESTION 3

Discuss with examples the role of the following in design research:

- (a) preliminary research
- (b) group discussions
- (c) case studies
- (d) testing information
- (e) anecdotes

[25 marks]

QUESTION 4

What do you understand by the following in research?

- (a) Research design
- (b) Participants

- (c) Data collection
- (d) Analysis of results
- (e) Discussion of results
- (f) Conclusions and recommendations [25 marks]

QUESTION 5

- (a) What is involved in the Total Approach and why is it used in designing. [5 marks]
- (b) Explain the objectives of the Total Approach in design. [6 marks]
- (c) Explain **SEVEN** principles that form the Total Approach design. [14 marks]

QUESTION 6

Explain what is involved during the following stages of a design research:

- (a) market research
- (b) production specification
- (c) alternative solutions
- (d) realization
- (e) testing and evaluation [25 marks]

END OF PAPER