

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF ENGINEERING NAD ENGINEERING TECHNOLOGY
DEPARTMENT OF POLYMER AND TEXTILE ENGINEERING

2014/2015 HARMATTAN SEMESTER EXAMINATION

PTE 403: QUALITY CONTROL IN POLYMER AND TEXTILE INDUSTRY

TIME: 2½ HRS DATE: 30TH APRIL, 2015.



INSTRUCTION: ANSWER ANY FIVE QUESTIONS

- 1(a) What is a quality management system?
(b) State the purpose of a quality management system.
(c) Highlight eight (8) benefits of quality management system.
- 2(a) Briefly describe the terms (i) Quality Control (ii) Quality Assurance.
(b) State four distinctions between quality control and quality assurance.
(c) State four procedures that could be recommended in order to maintain and control product quality.
- 3(a) A textile producer wants to make fabrics with weights not more than 4kg for a certain number of persons. In his effort to minimize wastage of material, what length of yarn does he require if the yarn count is 50tex?
(b) If you were employed as a Quality Control Personnel in a paint manufacturing industry, how would you ensure that the quality of your product is consistently controlled and maintained to meet the requirements of your customers?
- 4(a) Discuss all the possible tests to be carried out in a textile industry in order to control and maintain the quality of yarn?
(b) What is colour fastness?
- 5(a) Four yarns have been tested for single thread strength in grams and the values are as follows: 19, x, y, 37. Calculate the values of x and y. (Take the mean and variance as 26 and 49 respectively).
6. The distribution below shows the results obtained for the determination of flexural strength of polypropylene composite:
- | | | | | | |
|----|----|----|----|----|----|
| 34 | 56 | 57 | 35 | 53 | 37 |
| 43 | 60 | 62 | 45 | 50 | 58 |
| 42 | 59 | 50 | 45 | 60 | 48 |
| 52 | 53 | 47 | 43 | 54 | 54 |
| 41 | 35 | 48 | 42 | 47 | 48 |
- (a) Using a class interval of 31-35, 36-40, 41-45 etc., prepare a frequency distribution table.
(b) Draw an O-give for the distribution
(c) Using your graph, estimate the (i) lower quartile (ii) interquartile range (iii) semi-quartile range (iv) 30th percentile.