

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)  
ORGANISATION OF ISLAMIC COOPERATION (OIC)  
DEPARTMENT OF TECHNICAL AND VOCATIONAL EDUCATION (TVE)

Semester Final Examination

Course No: TVE 4235

Course Title: Educational Measurement and Evaluation

Summer Semester (2022-2023)

Time : 3 hours

Full Marks : 150

**There are 8 (eight) questions. Answer any 6 (six).**  
Figures in the right margin indicate marks of the questions.  
(Necessary formulas are attached)

1. a) Discuss various assessment types within the realm of educational measurement, namely Placement, Formative, Diagnostic, and Summative assessments. For each type, provide insights into their purpose, timing of administration, and provide examples to illustrate their application. 4\*4 CO1 PO2  
=16
- b) What is *authentic assessment*? Compare *traditional assessments* (tests and exams) and *authentic assessments* (tasks), and mention authenticity indicators. 9 CO1
2. a) Describe the meaning of the following terms with appropriate examples: assessment, test, measurement. 6 CO2 PO2
- b) Differentiate between criterion-referenced and norm-referenced assessment. For what purpose is each most useful? 9 CO2
- c) "Assessment may include qualitative and quantitative descriptions of students". Discuss this statement with a flow diagram. 10 CO2
3. Explain the concept of a *Table of Specifications* and then create one for a subject within your area of specialization. Adhere to the following guidelines: 25 CO2 PO2
  - Identify 5 content areas.
  - Include cognitive domains ranging from Knowledge to Create (though not mandatory for each content area).
  - Assign 3 questions, with two sub-questions under each question.
  - Allocate a total of 75 marks, with each question carrying 25 marks.

After creating the *Table of Specifications*, proceed to develop a test based on it.

4. a) List and briefly describe the factors that might lower the validity of a classroom assessment. 12 CO3 PO2
- b) In an area in which you are teaching or plan to teach, construct five short answer items, five true-false items, and five alternative matching exercises. State the objectives being measured by the items. 13 CO4
5. Calculate the mean, median, mode and standard deviation for the following distribution. Use the "Assumed Mean" method in computing the mean. 25 CO5 PO2

Scores	Frequency
195-199	1
190-194	2
185-189	4
180-184	5
175-179	8
170-174	10

165-169	6
160-164	4
155-159	4
150-154	2
145-149	3
140-144	1

6. a) Define and distinguish between the four scales of measurement, namely Nominal, Ordinal, Interval, and Ratio. Provide clear definitions for each scale and illustrate their differences with examples. 10 CO5 PO2
- b) Calculate the mean and standard deviation by combining the data from three distributions. 15 CO5

Distribution	N	M	$\sigma$
I	20	60	8
II	120	50	20
III	60	40	12

7. a) What is the concept of Percentile Rank? Determine the percentile rank of a student who obtained a score of 22 on an achievement test. Given the scores of other students in the same group, analyze the relative standing of this student who achieved a score of 22. 10 CO5 PO2

Achievement test scores:

12, 20, 25, 15, 8, 32, 28, 35, 22, 44, 36, 17, 29, 13, 9, 37, 40, 21, 10, 42

15 CO5

- b) Based on the performance in the IUT admission test of 2024, a student achieved a score of 75 out of 100 marks, placing him in the 95th percentile. In contrast, in the 2023 test, another student scored 85 out of 100 marks, positioning him in the 85th percentile. Evaluate which student exhibits superior performance and provide reasoning for your conclusion.

8. The following distributions represent the achievement of two groups, A and B, upon a memory test. 25 CO5 PO2

- a) Determine  $P_{30}$ ,  $P_{50}$  and  $P_{90}$  for each group.
- b) What is the percentile rank of score 55 in Group A's distribution and in Group B's distribution?
- c) A percentile rank of 70 in group A corresponds to what percentile rank in Group B?

Scores	Group A	Group B
79 - 83	6	8
74 - 78	7	8
69 - 73	8	9
64 - 68	10	16
59 - 63	12	20
54 - 58	15	18
49 - 53	23	19
44 - 48	16	11
39 - 43	10	13
34 - 38	12	8
29 - 33	6	7
24 - 28	3	2
	N=128	N=139