English Exam 1 – Read the following abstract and then choose the correct options

This paper shows that identification with engineering for engineering graduate students is positively and significantly predicted by engineering interest, competence, recognition, and interpersonal skills competence.

Background: Prior studies of engineering identity on undergraduates identified several factors (e.g., engineering interest and engineering recognition) as positive predictors of identification of engineering. Engineering competence, achieved by participating in design projects, is a crucial part of students' efforts to become more innovative engineers. Identity theory is used to understand undergraduates' persistence in engineering, as students with stronger engineering identification are more likely to persist. More work is needed focusing on graduate students.

Research Questions: Do engineering identity measurement frameworks studied for undergraduate students also apply to graduate students? Do they correlate with intention to complete the degree? What predicts the engineering identity of engineering master's and doctoral students?

Methodology: Interviews informed development and adaptation of a multi-scale survey instrument. Factor analyses identified four factors that relate to graduate engineering identity: 1) engineering interest; 2) engineering recognition; 3) engineering competence; and 4) interpersonal skills competence. Three sequential multiple linear regression models were used to predict engineering graduate students' engineering identity.

Findings: The final regression model, which includes student characteristics and the four factors resulting from confirmatory factor analysis, predicts 60% of the variance in engineering identity-substantially more than similar undergraduate engineering identity models. All four factors were significant and positive predictors of graduate students' engineering identity. The engineering recognition factor in particular needed adaptation to emphasize peers and faculty members over family, although family remained important.

Correct answers are highlighted

1 – What is the study about?

a) Trends in engineering
b) Barriers to engineering education
c) The profile of undergraduate engineering students
d) The identity of engineering

2 – The study has several objectives, except:

a) Explore correlations
b) Further understand the perception of a particular demographics
c) Identify key factors associated with the identity of engineering
d) Predict the most-likely identity of engineers

3 – It can be inferred from the abstract that engineering is:

a) A simple field of study
b) More difficult than health studies
c) An increasingly difficult study area
d) A multifaceted knowledge area

4 – It can be inferred from the abstract that a number of factors may predict engineering identity, including:

a) Interest in the field of engineering
b) Knowledge of math
c) High marks in high school
d) Income level

5 – The study described in the abstract was based on:

a) Fully qualitative analysis
b) Application of questionnaires
c) Collection of water samples
d) Field work

6 – According to the abstract, inferential statistics was used to:

a) Understand the demographics
b) Predict professional success in the engineering field
c) Identify predictors of engineering identity
d) Facilitate engineering recognition

7 – Identity theory was previously used to:

a) Explore the academic behavior of engineering undergraduates
b) Test degree completion
c) Find the truth about engineering education
d) Explore the role of innovative practices

8 – Regression models were used to:

a) Identify predictors
b) Confirm null hypothesis
c) Explain the ideal engineering coursework
d) Compare undergraduate and graduate students

9 – The study described in the abstract has a number of contributions, except:

a) Expose best practice in engineering education
b) Facilitate competition of engineering degrees
c) Identify predictors of engineering identity among graduate students
d) Debunk fake science around engineering education

10 – One of the key drivers of the study presented in the abstract:

a) **Lack of studies about graduate students' engineering identity**
b) Rising costs of engineering degrees
c) Worsening conditions of engineering education
d) Poor reputation of engineering education