UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: DTD 2062
COURSE	: TOOL & DIE ECONOMICS
SEMESTER/SESSION	: 1- 2021/2022
DURATION	: 3 HOURS

Instructions:

1. This booklet contains **5** questions. Answer ALL.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise up your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

a) **Explain** the purpose of *cost estimation* and *cost calculation*. (5 marks)

b) **Discuss** the sources of error in cost estimation. (4 marks)

c) **Differentiate** direct material and indirect material. (4 marks)

d) **Distinguish** between *factory overhead* and *office overhead.* (4 marks)

e) **Explain** the main elements of cost calculation. (3 marks)

f) **Construct** the cost ladder diagram properly. (5 marks)

QUESTION 2

While analyzing a cost estimation, an estimator found that the following expenditures were incurred in their product manufacture.

Material	= Rm 209,000
Labor Cost	= Rm 110,000
Depreciation of plant	= Rm 8,000
Depreciation of machinery	= Rm 10,000
Depreciation of office equipment	= Rm 2,000
Office Rent	= Rm 1,000
Taxes	= Rm 2,000
Insurance for factory	= Rm 3,000
General office expenses	= Rm 2,400
Factory utilities	= Rm 6,600
Office utilities	= Rm 4,500
Direct expenses	= Rm 1,500
Sales commission	= Rm 8,000
Plant manager's salary	= Rm 15,000
Office staff salary	= Rm 20,000
Sales income	= Rm 660,000

Base on the data above, **calculate**:

a) Direct cost (5 marks)
b) Factory cost (5 marks)
c) Production cost (5 marks)
d) Total cost (5 marks)
e) Profit. (5 marks)

QUESTION 3

a) **Explain** the advantages of straight-line depreciation method.

(5 marks)

b) **Calculate** the depreciation value in the following case.

Cost of machine	= RM 5,000
Cost of accessories	= RM 2,200
Installation and erection charge	= RM 500
Scrap value of the machine	= RM 800
Future worth of the machine	= 30% for 15 years

(10 marks)

QUESTION 4

Calculate the machine hour rate for the following details;

Cost of machine	= RM 90,000
Cost of accessories	= RM 10,000
Installation charge	= RM 800
Erection charge	= RM 1,000
Scrap value after 15 years	= RM 2,000
Energy cost	= RM 2.50 / unit
Rating of motors	= 1.5 KW, 0.7KW, 0.3KW
Maintenance charge	= 6% of depreciation
Rate of interest	= 9%
Labour cost	= RM 5 hour
Overheads	= 130% of labor cost
Assumed life of machine	= 15 years

Cost of the machine, accessories, and installation and erection charges are likely to increase by 65% over 15 years.

Machine occupies $20m^2$ in a building of area $1200m^2$, rented at RM 1200 / month. The machine further utilizes 7% of the total area.

(20 marks)

QUESTION 5

Determine the cost of a plastic product for injection moulding circumstance below.

No of cavity	= 2
Component weight	= 20.5 g
Sprue Weight	= 3 g
Runner weight	= 1.5 g
Raw material	= Polystyrene clear
Raw material Price	= Rm 27/kg
Cycle time	= 30 sec
Projected Area	= 54.3 cm^2
Injection Pressure	= 650 kg/cm^2
Load Capacity	= 35.35 T
Machine capacity	= 80
Machine rate/shift	= Rm 300
Mould cost	= 26,000
(To be amortized in one year)	

(15 marks)

----------End of question----------

Criteria	Marks
All question answered will be marked according to the answer scheme	/100