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CONFIDENTIAL

SET A

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

SEPTEMBER 2014 SESSION

SUBJECT CODE	:	**FGB30103**
SUBJECT TITLE	:	**MACHINE TOOL VERIFICATION AND MAINTENANCE**
LEVEL	:	**BACHELOR**
TIME / DURATION	:	**2.00 PM – 4.30 PM (2.5 HOURS)**
DATE	:	**5 JANUARY 2015**

INSTRUCTIONS TO CANDIDATES

1. **Please read the instructions given in the question paper CAREFULLY.**
2. **This question paper is printed on both sides of the paper.**
3. **Please write your answers on the answer booklet provided.**
4. **Answer should be written in blue or black ink except for sketching, graphic and illustration.**
5. **This paper consists of FIVE (5) questions. Answer any FOUR (4) questions only.**
6. **Answer all questions in English.**

THERE ARE 3 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

INSTRUCTION: Answer any FOUR questions.
Please use the answer booklet provided.

Question 1

(a) What do you understand by maintenance strategies and objectives?

(9 marks)

(b) Describe preventives maintenance? Explain different preventives maintenance task.

(8 marks)

(c) Explain why did plant shutdown for machine maintenance need to be adequately planned.

(8 marks)

Question 2

(a) Explain condition based maintenance? What are the benefits obtained by implementing a condition based maintenance system in machine tool maintenance?

(9 marks)

(b) "Geometrical test is more practical and appropriate measure of equipment/machine performance". Discuss.

(8 marks)

(c) Describe the measurement defects of pitching and winding of a lathe before the correction done by scrapping.

(8 marks)

Question 3

(a) Machine tool alignment or geometrical tests are very important? Explain.

(5 marks)

(b) Name the various instruments required for performing the alignment tests on machine tools.

(5 marks)

(c) Describe how would you perform the following alignment / geometrical tests for lathe and milling machine.

(i) Measurement of the difference in height between headstock and tailstock centres on lathe machine.

(5 marks)

(ii) Parallelism of milling machine table face between the axis of the main spindle.

(5 marks)

(iii) Measurement of lathe machine run-out centres.

(5 marks)

Question 4

Below are the items that needed to be check when servicing the X-Y axis for CNC milling :

- Checking ball screw binding

(6 marks)

- Checking ball screw bearing

(6 marks)

- Ball screw maintenance

(7 marks)

- Checking for lost motion

(6 marks)

Describe in details the components that need to be checked for each items and also the corrective action needed to overcome the situations.

Question 5

(a) Cleaning is considered as a prime important activity in machine tool maintenance, although many operators and supervisor give least importance to such activities. Describe.

(8 marks)

(b) Why the parameters need to be checked when conducting coolant tank maintenance? Also state the cleaning procedure when servicing this tank.

(8 marks)

(c) Describe the different types of preventive maintenance programs for CNC machine tools.

(9 marks)

END OF QUESTION