

Document no.	ACAD-FO-002c
Revision no.	001



## ASSESSMENT COVER PAGE : ERD

SUBJECT: Fitting & Machining

LEVEL: 3

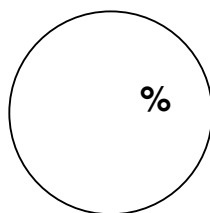
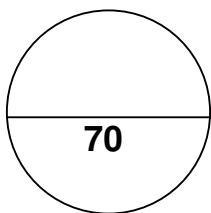
DATE: June 2018

EXAMINER: D. Cronje

NAME OF MODERATOR: Focus Group

Student Surname		Name	
ID. Number		Group	

Topic and outcomes covered	<b>Topic 1- 8</b>
Duration	<b>1½ Hours</b>
Evidence Required	<b>Written test script</b>
Instrument	<b>Internal Test</b>



Rating Scale	Remark	Rating
4	Highly competent	80 - 100
3	Competent	50 - 79
2	Not yet Competent	40 - 49
1	Not achieved	0 - 39

### SIGNATURES:

**Student declaration:** I declare that the evidence provided is my own work.

STUDENT: \_\_\_\_\_ Date: \_\_\_\_\_

Revision Date: \_\_\_\_\_

Indicate which questions you found difficult (tick ✓)

1	2	3	4	5	6	7	8	Total
9	10							100

LECTURER: \_\_\_\_\_ Date: \_\_\_\_\_

COMMENT: \_\_\_\_\_

Post moderation \_\_\_\_\_

College moderation: \_\_\_\_\_ Date \_\_\_\_\_

External moderation \_\_\_\_\_ Date \_\_\_\_\_

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## **INSTRUCTIONS AND INFORMATION**

1. Answer ALL the questions.
  2. Read ALL the questions carefully.
  3. Number the answers correctly according to the numbering system used in this question paper.
  4. Questions may be answered in any order, but subsections of questions must be kept together.
  5. Show ALL the intermediate steps.
  6. ALL the formulae used must be written down.
  7. Questions must be answered in BLUE or BLACK ink.
  8. Write neatly and legibly.
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**QUESTION 1 : (BEARINGS) ( 17 Marks)**

1.1. Determine if the following statements are **true** or **false**:

1.1.1. When working with bearings, contamination of foreign materials are acceptable.

1.1.2. The main function of a bearing is to extend the life of machinery.

1.1.3. A plain bearing is also called friction bearing.

1.1.4. The material “solid bronze” are suitable for the manufacturing of bearings carrying high load and low speed .

1.1.5. Solid bearings are used in high speed applications.

1.1.6. Plummer block bearings are also called pedestal bearings.

1.1.7. Thrust bearings are used where only axial loads exist.

[ 7 Marks]

1.2. Name 4 advantages of plain bearings?

[ 4 Marks]

1.3. Name reasons why you would use nylon as bearing material?

[ 2 Marks]

1.4. What is meant by the following terms:

1.4.1 Compatibility (Explain term)

1.4.2 Conformability (Explain term)

[ 4 Marks]

**QUESTION 2 : (COUPLINGS) ( 13 Marks)**

2.1. Determine if the following statements are **true** or **false**:

2.1.1. Jacking bolts are used to lift a motor from its base.

2.1.2. A flange coupling is seen as a rigid coupling.

2.1.3. Oldham couplings is made of three (3) separate pieces of which two are flanges.

[ 3 Marks]

2.2. Name three types of misalignments of couplings.

[3 Marks]

2.3. Mention four faults that can result from careless fitting or faulty alignment in a coupling.

[4 Marks]

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2.4. Explain the following:

2.4.1. Why is it necessary to isolate a motor electrically before maintenance?

2.4.2. What is a dowel pin used for on the foot of a motor?

2.4.3. What is meant by pump “sole plate” ?

[3 Marks]

**QUESTION 3: (BRAKES AND CLUTCHES) ( 8 Marks)**

Name 2 **disadvantages** of each of the following brake systems:

3.1. Disk brakes

3.2. Drum brakes

3.3. Thruster brakes

[6 Marks]

3.4 Name two faults which will normally occur with clutches and brakes?

[2 Marks]

**QUESTION 4 : (V-BELT DRIVES) ( 7 Marks)**

4.1 Explain what a torque limiter is used for?

[2 Marks]

4.2 Make a drawing of the above mentioned pulley system including the following labels:

PCD, Jockey pulley, Direction of turn, driving pulley, Driven pulley

[5 Marks]

**QUESTION 5 : (CHAIN DRIVES) ( 9 Marks)**

5.1 List 5 **disadvantages** of chain drives when compared to belt and gear drives. [5 Marks]

5.2 A malfunctioning chain drive can be identified by certain symptoms. List four symptoms.

[4 Marks]

**QUESTION 6 : (GEAR DRIVES) ( 6 Marks)**

6.1 You as a fitter has assembled and installed a gear drive (gearbox) on an assembly line of the factory. List 3 problems that can cause the gear system to fail and provide a suggested remedy.

[6 Marks]

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**QUESTION 7 : (PIPES AND PIPE-FITTINGS) ( 5 Marks)**

**7.1** Name 3 materials that can be used to seal **threaded** pipes. [3 Marks]

**7.2** What is the meaning of the pipe schedule number [2 Marks]

**QUESTION 8 : (VALVES) ( 5 Marks)**

**8.1** Valves are classified into 2 main groups. Name them . [2 Marks]

**8.2** What is the main purposes of installing a valve in a pipe-line. Name 3 purposes [3 Marks]

**TOTAL: 70**