



UNIVERSITY COLLEGE TATI (UCTATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE	: BME 3073
COURSE	: ADVANCED CAD & MODELLING
SEMESTER/SESSION	: 1-2024/2025
DURATION	: 3 HOURS

Instructions:

1. This booklet contains **2** sections. Answer **ALL** questions.
2. All answers should be drawn in **INVENTOR software**.
3. Save your drawing files in to the created folder **20B0XXXX_FINAL BME3073_ADV CAD MODELING_NAME** (20B0XXXX is your matrix number).
4. Send your folder/file to the email address given below.
(syahrir@uctati.edu.my)

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

THIS BOOKLET CONTAINS 8 PRINTED PAGES INCLUDING COVER PAGE

INSTRUCTION: Submit your answer using EMAIL. Save your drawing as your Name and Metric No., for example, A100XXXXX_FINALBME3073_HAIKAL BIN ISMAIL

SECTION A:

Reproduce all the Parts of the Air Motor Assembly as shown in **Appendix B**: All dimensions are in **millimeters**.

- | | |
|---------------------|------------|
| 1. Base Plate | (5 Marks) |
| 2. Mounting Bracket | (5 Marks) |
| 3. Motor Block | (15 Marks) |
| 4. Crank Shaft | (5 Marks) |
| 5. Crank | (5 Marks) |
| 6. Piston | (5 Marks) |
| 7. Flywheel | (5 Marks) |
| 8. Connecting Rod | (5 Marks) |
| 9. Crank Pin | (5 Marks) |
| 10. Washer | (5 Marks) |
| 11. Cylinder Head | (5 Marks) |

Note:

- Place all the files (.prt) in the folder that you renamed.
- You will be graded on the quality of the modelling process for all the solid models, i.e., **sketches made**, **part orientation**, and the **accuracy of the solid models**.

SECTION B:

Illustrate the **unexploded** and **exploded** 3D assembly models of the **Air Motor** assembly from all the solids drawn earlier in section A, referring to **Appendix A**.

You will be graded on the quality of the final assembly 3D model based on these criteria:-

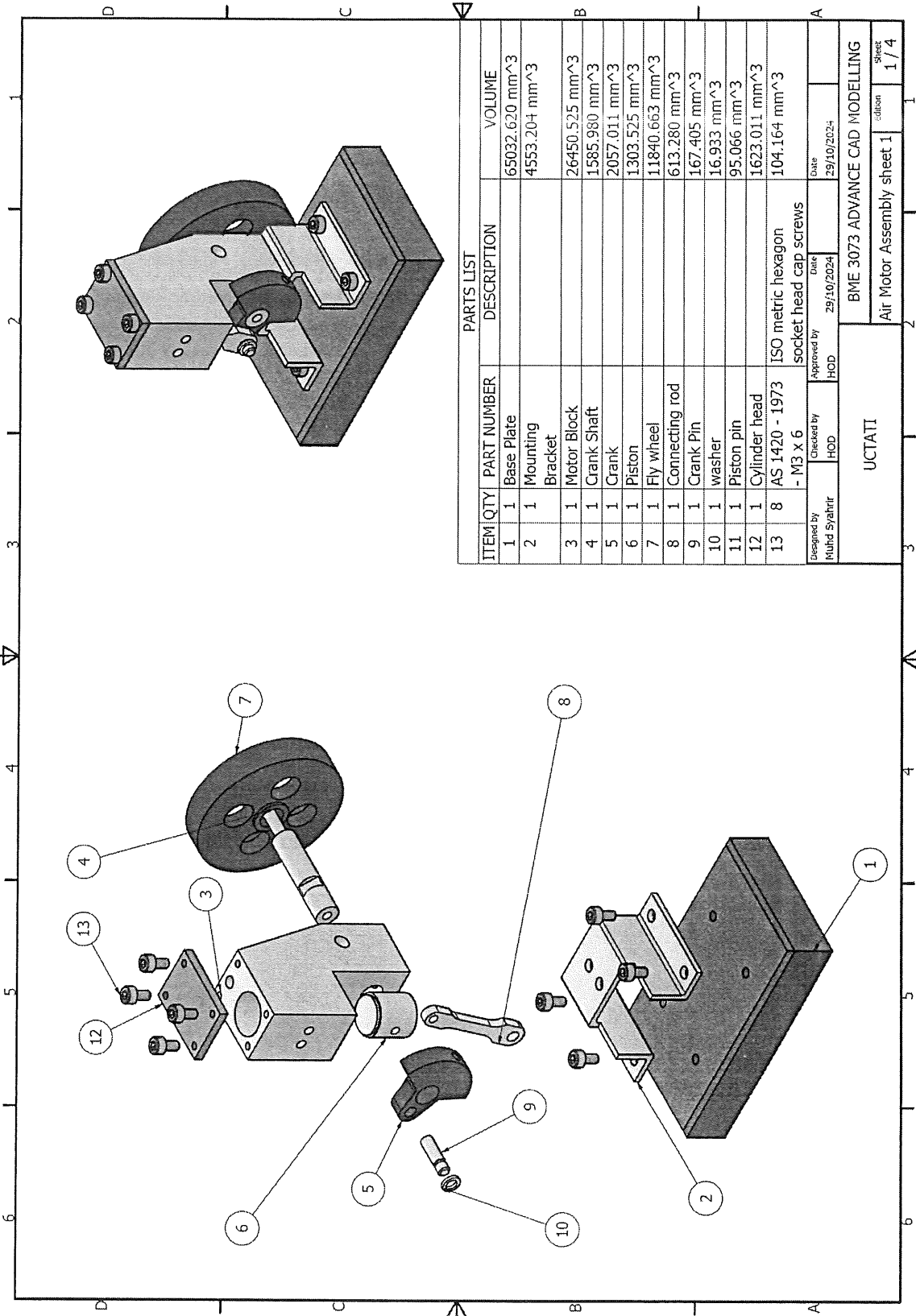
- | | |
|---|------------|
| 1. Number of constraints required | (15 Marks) |
| 2. Proper Orientation of unexploded 3D assembly | (10 Marks) |
| 3. Proper Orientation of exploded 3D assembly | (10 Marks) |

Note:

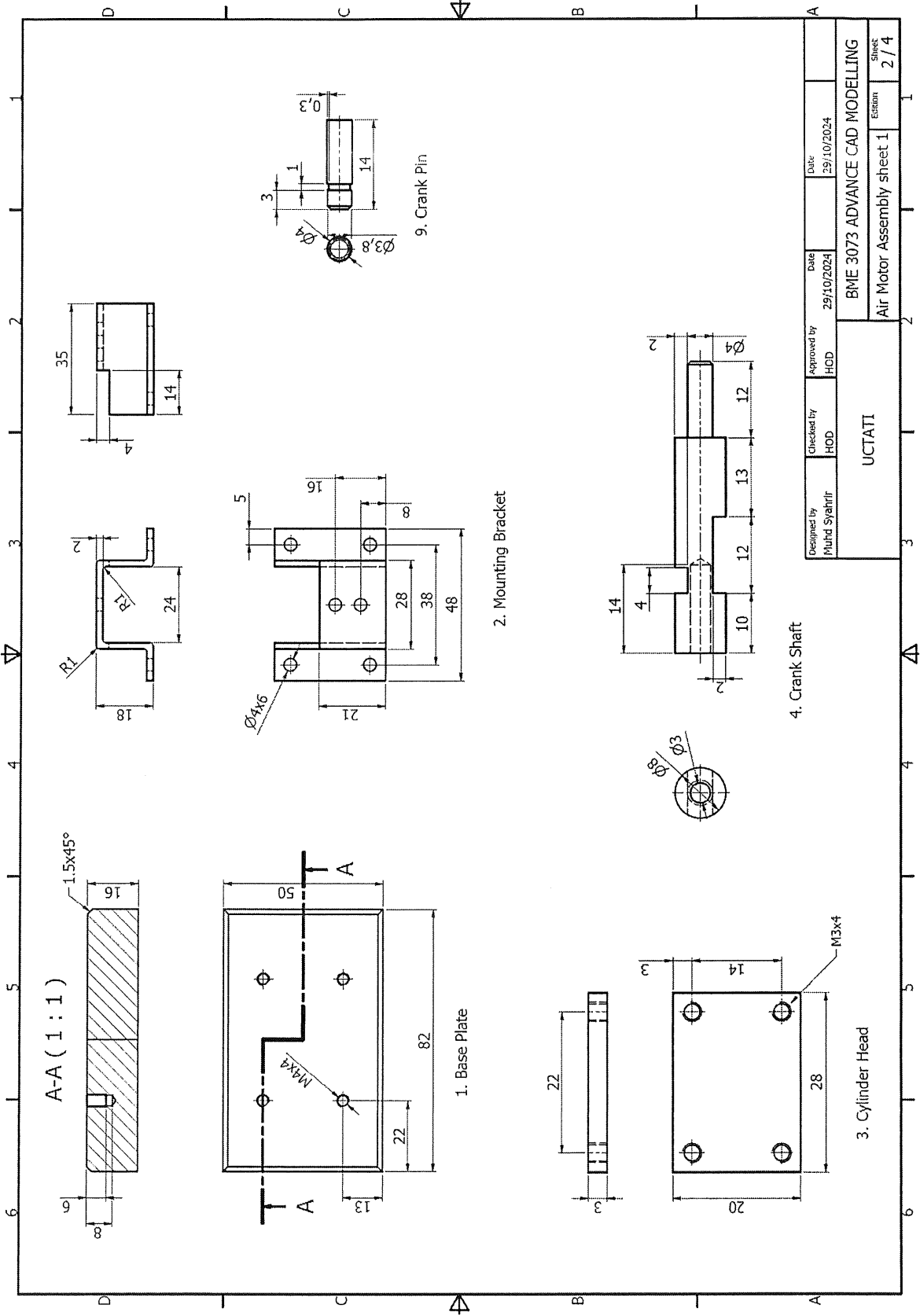
- Save the assembly file and picture files as (Air motor_assy.asm) and (Air Motor_assy.jpg) in the same folder with the other solids model (.prt).

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

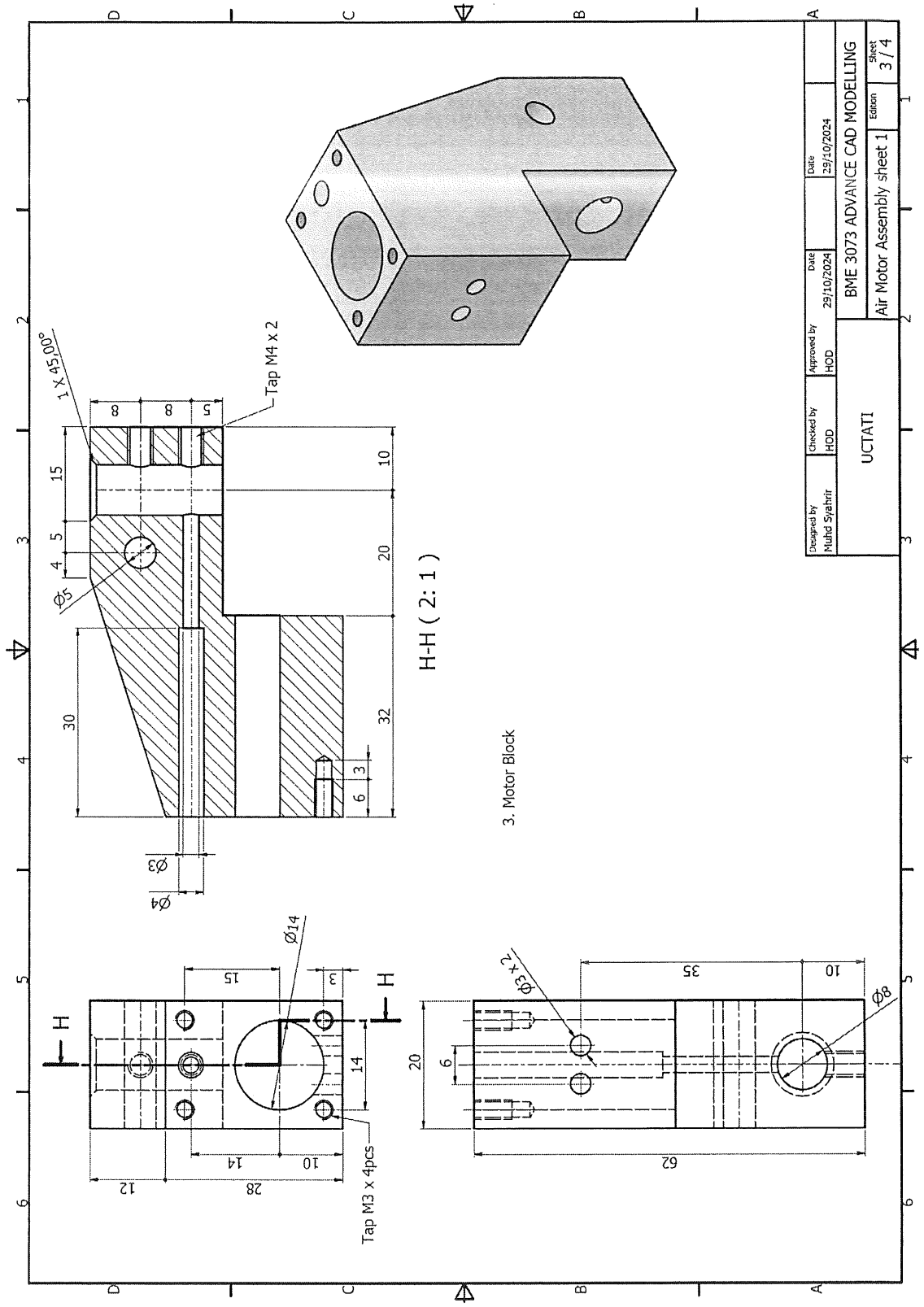
APPENDIX A

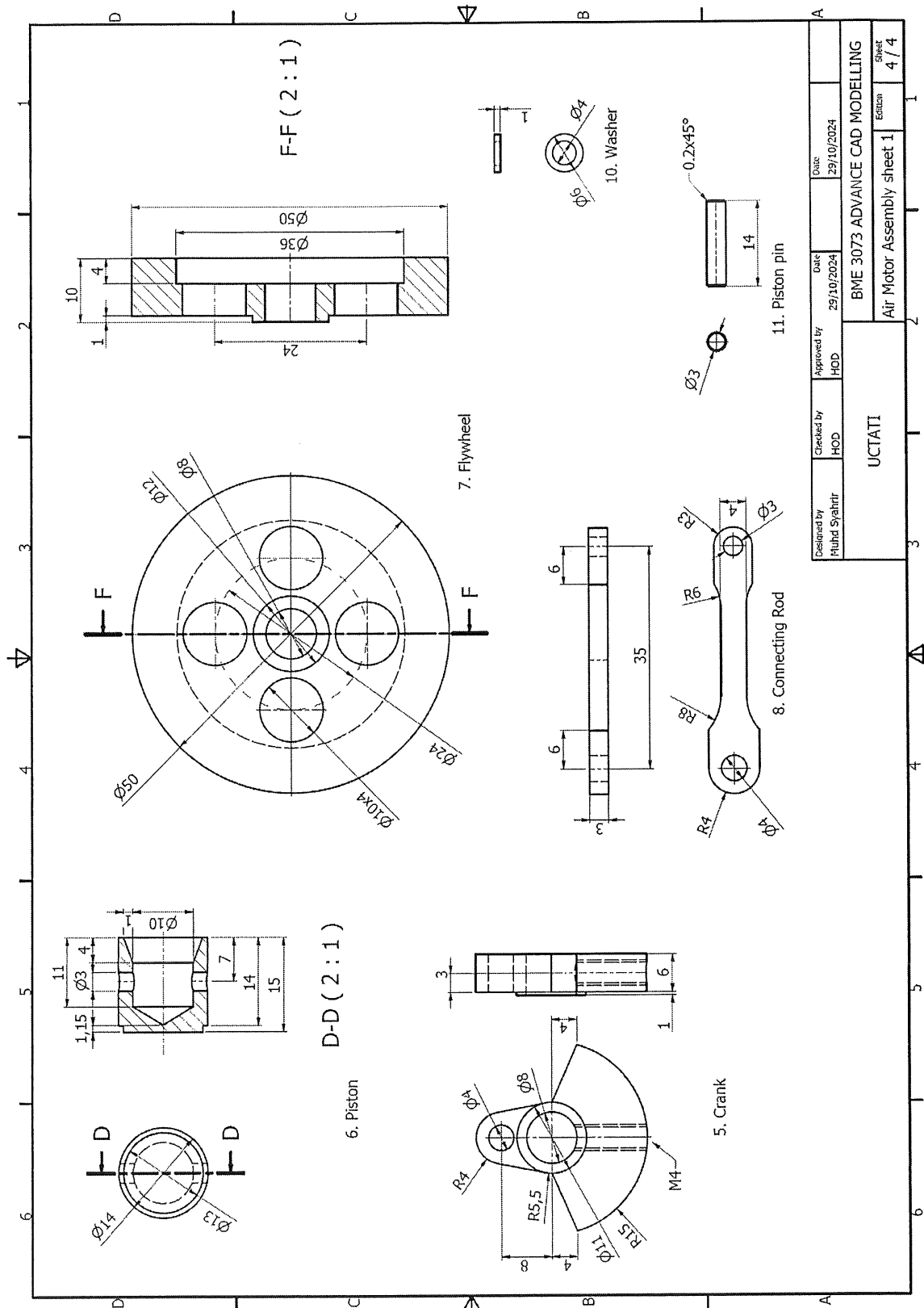


APPENDIX B



Designed by Muhammad Syahrir	Checked by HOD	Approved by HOD	Date 29/10/2024	Date 29/10/2024
UCTATI			BME 3073 ADVANCE CAD MODELLING	
Air Motor Assembly sheet 1			Estimate	Sheet 2 / 4





Designed by Hud Syahrir	Checked by HOD	Approved by HOD	Date 29/10/2024	Date 29/10/2024
BME 3073 ADVANCE CAD MODELLING				
Air Motor Assembly sheet 1				
UCTATI				Sheet 4 / 4

-----END OF QUESTION-----

RUBRIC

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