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KURSUS DIPLOMA LANJUTAN KEJURUTERAAN JENTERA
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ITM, SHAH ALAM.

TO DESIGN AND FABRICATE A MODEL
STATIC AND DYNAMIC BALANCING MACHINE FOR SINGLE
DISC AND RIGID ROTORS.

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CHAPTER ONE

1. INTRODUCTION:

Vibratory phenomena are common in nature, in some of the historical significant acts and crafts, and in many of the processes and products of modern technology.

Mechanical vibration at relatively low frequencies is extensively used in industry for separation, sieving, conveying, compacting, percussive drilling and various machining techniques. At very high mechanical frequencies, modern electronic techniques have made possible the generation of high intensity beams of ultrasonic vibratory energy using magneto-strictive and piezo-electric transducers.

Vibration level monitoring or diagnostics with remote indicating or recording instrumentation is increasingly being used to facilitate the supervision of machines and plant, where permissible limits for satisfactory operation in relation to malfunction and wear may be set from experience. Also, programmed environmental vibration testing on sensitive equipment to ensure satisfactory operation and life in service is a widely used procedure.

In contrast to the foregoing uses of mechanical vibration, there is a negative or undesired aspect of vibration that is of widespread concern to engineers. The importance of this problem is indicated by the extensive literature on vibration causes analysis, and control. This situation arises largely as a side-effect of mechanisation in industry and transport where the trend is toward high power and speed in prime movers and other machines concurrently with lighter forms of construction in all types of vehicles and structures. Unwanted vibration can be detrimental to the proper operation and useful life of equipment, and to human comfort and health.