TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MARINE ENGINEERING

EMR 2213 : ENGINEERING DRAWING & DESIGN II

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 3 HOURS

DATE: 15 May 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID, Drawing paper A2

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

Figure QN1 shows parts of PULLEY BLOCK assembly. Assemble the parts and draw FULL SIZE in First angle orthographic projection, the following views;

(a) a sectional front elevation along a symmetrical vertical plane.

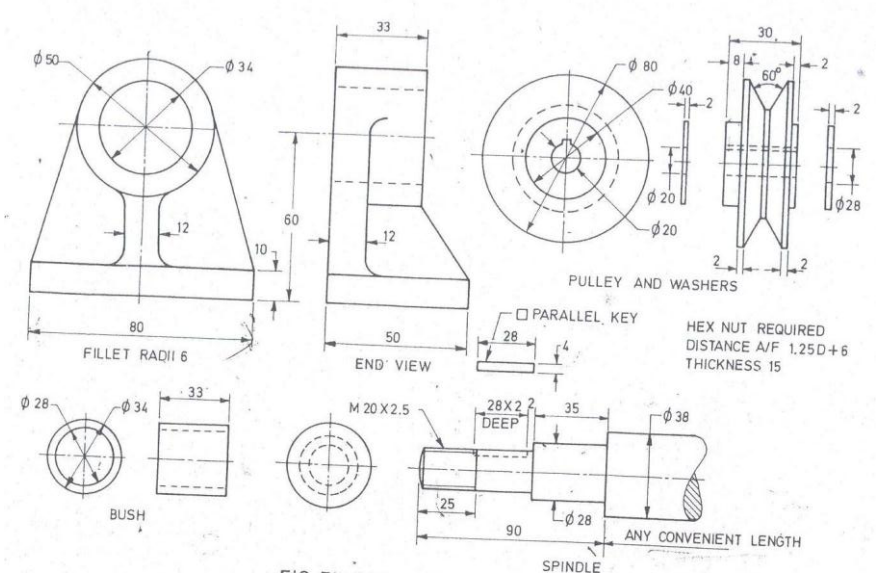
(b) end elevation from the side with the nut

(c) plan.

Include a fastening nut, SIX leading dimensions, parts list and symbol of projection.

(30 marks)

Figure QN1.



Question TWO

(a) Outline the importance of correct storage of materials. (4 marks)

(b) Explain briefly the four main parts of a valve symbol. (4 marks)

(c) State SIX main features to be considered when selecting a valve. (6 marks)

(d) Explain the preventive measures taken in large pipe lines carrying fluids in order to avoid the following Dangers;

(i) Bursting from over-pressure

(ii) Fires due to leakage

(iii) Freezing or caking causing blockage

(iv) Explosions

(6 marks)

Question THREE

(a) i) State and explain the THREE types of displays used in instrument design.

ii) Explain at least ONE example for each of the type of display stated in a(i) above

(9 marks)

Question FOUR

(a) Outline the procedure on how to use a portable fire extinguisher in the event of fire outbreak.

(5 marks)

(b) i) State and explain the THREE main classes of fire

ii) What are the possible fire extinguishers for the classes of fire named in b(i) above.

(9 marks)

(c) Explain briefly how each of the fire extinguishers named in b(ii) is identified. (6 marks)

Question FIVE

(a) State with the aid of sketches FOUR types of couplings used for power transmission. (8 marks)

(b) Draw the symbol for the following components used in pipework;

i) 90^{o} elbow welded

ii) Tee reducing soldered

iii) Union screwed

iv) Gate valve hose flanged

(4 marks)

(c) Draw sketches of the following components ;

i) U-seal

ii) Cup-seal

iii) Slip-on flanged

iv) Threaded flange

v) Socket welded flange

(8 marks)