JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR THE DEGREE IN SCIENCE IN CONSTRUCTION MANAGEMENT

1ST YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCB 1104

COURSE TITLE: ENGINEERING DRAWING II

EXAM VENUE: **STREAM: BSc CONSTRUCTION MGT**

DATE: ../04/2024 **EXAM SESSION:**

DURATION: 3 HOURS

Instructions

1. **Answer question 1 (Compulsory) and ANY other two questions**
2. **Candidates are advised not to write on question paper**
3. **Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (20 MARKS)

a) The following are some common civil engineering structures which you are expected to know. In each case sketch the side view and state its function in engineering Briefly explain their purposes (**6 Marks)**
   i. Reservoir
   ii. Weir
   iii. Manhole

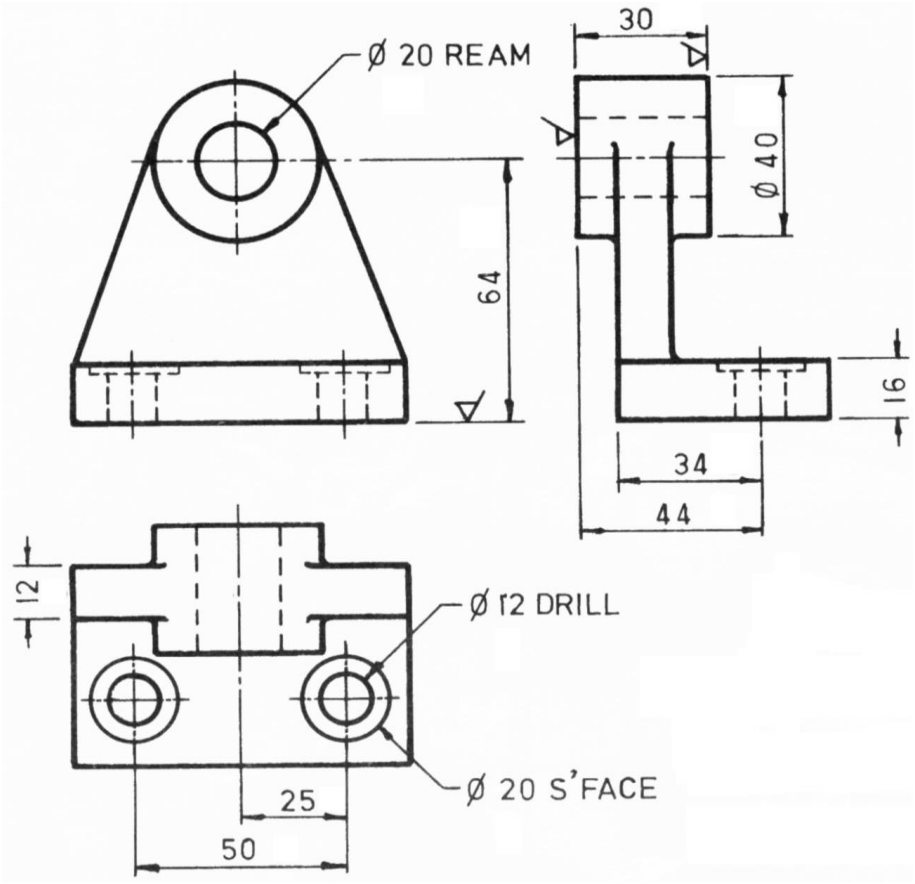
b) Drawings are often used by the second or third party and rarely by draftsmen themselves. The draftsman needs to present the drawing to the user in a format that is internationally acceptable. The actual format used may vary slightly from the standard format based on the particular organization's preferences; customized to meet organizational needs. Briefly explain how the factors listed below may affect the quality of a drawing (**5 Marks)**
   i. Paper size
   ii. Choice of scale
   iii. Paper layout
   iv. Views presented
   v. Positioning of the views presented

c) When designing a structure, only one copy of a drawing is developed but when the structure is to be constructed, the need for more copies arise to meet the needs of all the stakeholders. Traditionally, extra copies have been produced by **blue printing process**. Briefly explain the process behind blue printing process (**5 Marks)**

d) List any four types of sectional view which you know (**4 Marks)**

QUESTION TWO (15 Marks)

Given the orthographic multi-views of an object below, develop the pictorial view using free hand sketching method



QUESTION THREE (15 Marks)

Use Fig Q3 to answer the questions that follow.

a) Draw the front and top plan views of the object. **Take the front as the side with the 72 units** dimension. (**6 Marks)**

b) Position an **off-set cutting plane line** to run longitudinally through the object and show this line on one of the views drawn in a) above (**3 Marks)**

c) Draw the sectional view produced by the cutting plane in b) above (**4 Marks)**

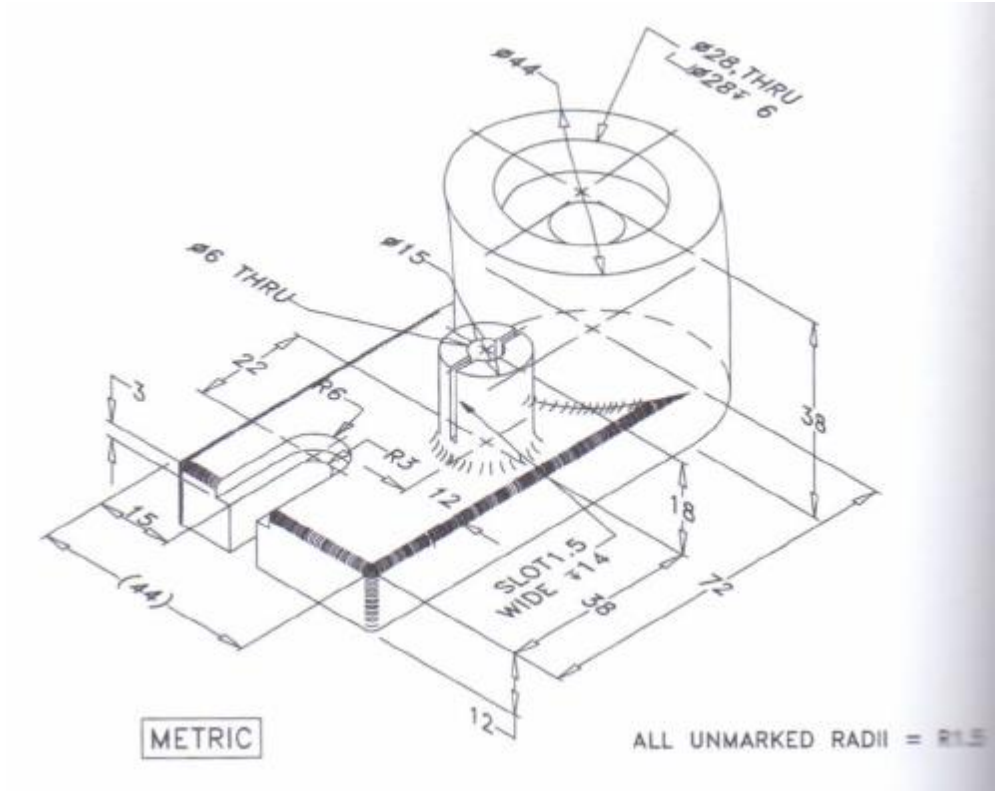


Fig Q3

QUESTION FOUR (15 Marks)

Drainage problem has been noticed along the Nyakasumbi – Sinapanga road on the eastern part of the main campus, JOOUST. To address the problem, a culvert and road drains are required to be constructed. A ring culvert of diameter 600mm is to be used. The culvert is 100mm thick, laid on a mass concrete foundation 200mm thick and is to be haunched in mass concrete of minimum thickness 100mm and then covered with a layer of compacted murram 300mm thick. Develop working drawings to be used in the construction of the culvert. The effective width of the road is 7000 mm.

QUESTION FIVE (15 Marks)

Fig Q5 is a sample floor plan of a two- bedroomed residential house which is self contained. Dimensions and some windows are missing. Insert the missing windows and all dimensions and draw the plan to scale. Ignore any other details contained therein.

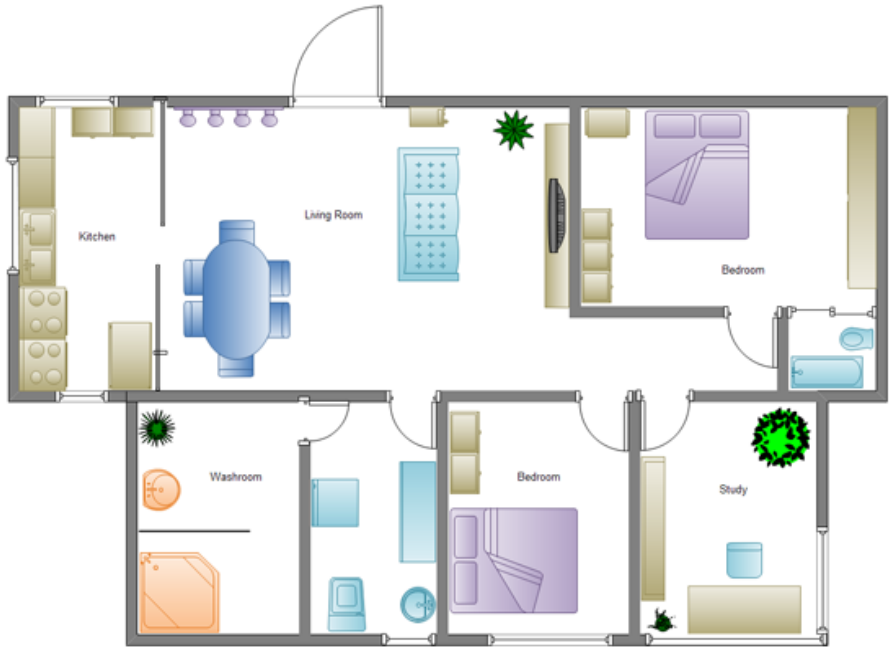


Fig Q5