

**UNIVERSITY OF AGRICULTURE, ABEOKUTA**  
**COLLEGE OF ENVIRONMENTAL RESOURCES MANAGEMENT**  
**DEPARTMENT OF AQUACULTURE AND FISHERIES MANAGEMENT**  
**SECOND SEMESTER EXAMINATION 2009/2010 SESSION**

**FIS 304: Fish Gear Design and Production**

**INSTRUCTION: Answer Four (4) Questions in All.**

**TIME: 2 Hours 30 Minutes**

1. (a). Find the cutting patterns of Figure 1A to E.  
(b). What are the detailed cutting patterns of the following:
  - i. 30b 30p
  - ii. 70b 75p
  - iii. 6b 30p
  - iv. 180b 200p
  - v. 40b 70p
  - vi. 50b 80p
  - vii. 75b 160p
  - viii. 80b 90p
2. (a). Calculate the area of the Castnet in Figure 2  
(b). What is the mouth area?
3. (a). Describe fully the Doppler Shift in water.  
(b). A trawler is approaching a school of fish in front and is sailing at 12 knots. The echosounder of the trawler is transmitting a frequency of 40 kHz. At what frequency does the trawler receive echoes?
4. (a). Given the following:  
Mesh size = 20mm; No of meshes in a loop = 3 meshes; No of meshes along the vertical row = 100; Spacing on the head rope = 50m; No of loops on the head rope = 50.  
Calculate:
  - I. Primary hanging – co-efficient ( $E_1$ )
  - II. Percentage of looseness
  - III. Secondary hanging co-efficient ( $E_2$ )
  - IV. Fictitious area of the netting if unmounted,
  - V. Actual working area of the gear if mounted,
  - VI. Not utilization co-efficient
- b. (i). Convert 210<sup>D/21</sup> to R-tex.  
(ii). Calculate the twine diameter of 583 tex
5. (a). Define the following:
  - (i) A mesh; (ii) Coir; (iii) Fishing technology; (iv) Monofilament

(b). State **seven** advantages of knotless netting over knotted netting.

(c). Explain the factors you would consider to choose a better gear between two fishing gears.
6. (i) What are the objectives of mounting?  
(ii) Explain the factors that can affect determination of natural fibres.  
(iii) Briefly write on the strand systems you have studied.

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# FIG 1

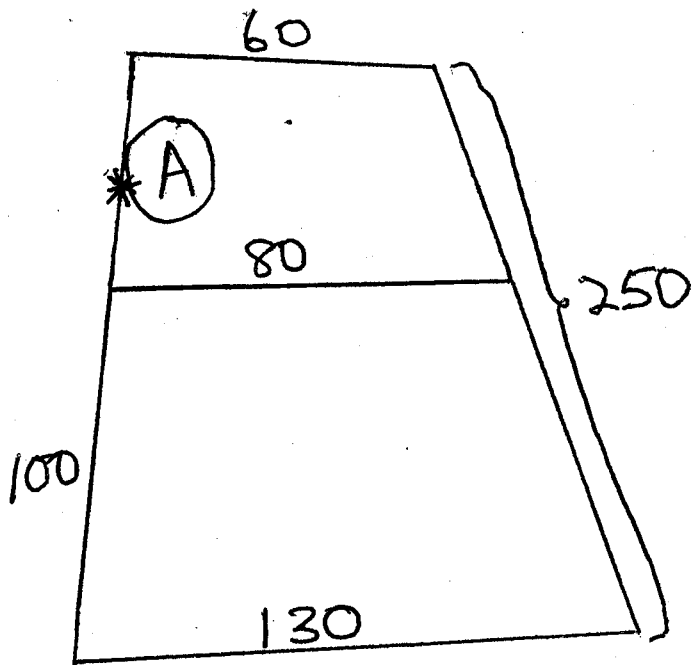


FIG A

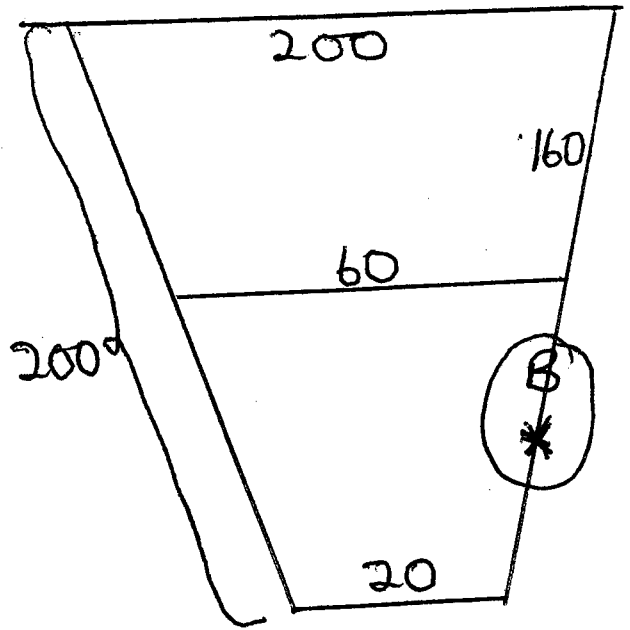


FIG B

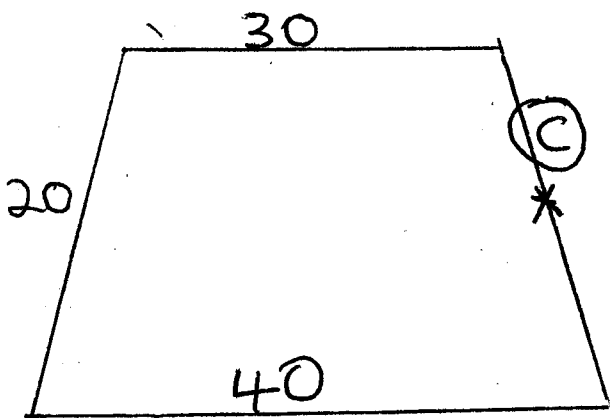
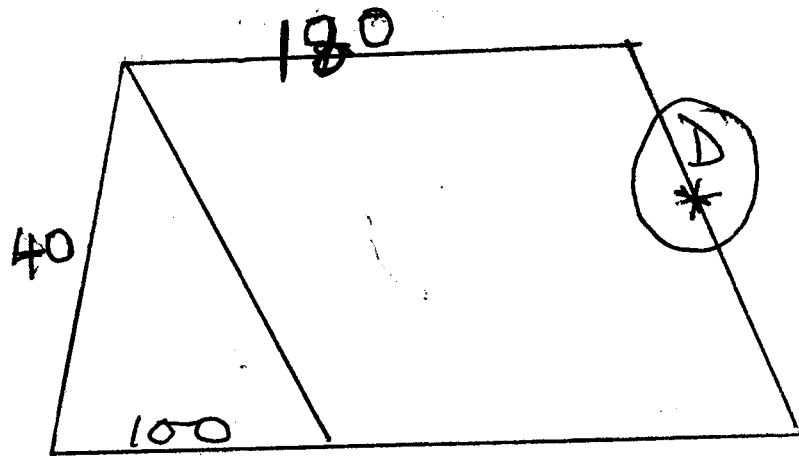


FIG C



300  
FIG D

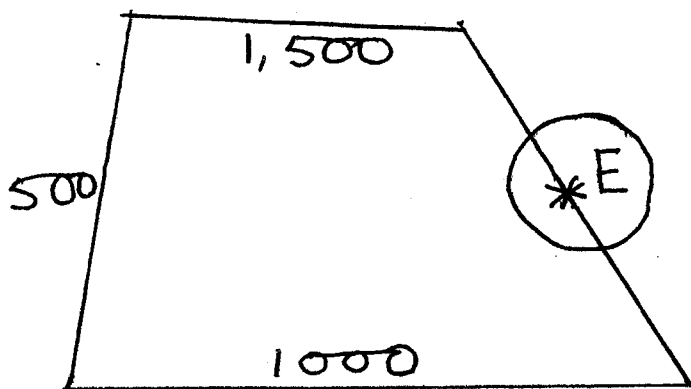


FIG E

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FIG 2

