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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2014/2015**

COURSE NAME : WEAVING PRODUCTION
TECHNOLOGY II

COURSE CODE : BNH 30603

PROGRAMME : 3 BNH

EXAMINATION DATE : JUNE 2015 / JULY 2015

DURATION : 2 HOURS 30 MINUTES

INSTRUCTION : ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) List any **FOUR (4)** auxiliary motions in a typical weaving machine. (2 marks)
- (b) Differentiate between rapier and projectile in term of:-
- (i) Insertion rate (pick per minutes)
 - (ii) Shedding mechanism that can be used
 - (iii) Disadvantages of each loom types
- (9 marks)
- (c) (i) Describe the different ways in which weaving machines can be classified? (3 marks)
- (ii) Explain in depth only **THREE (3)** classification from Q1(c)(i) (6 marks)
- Q2** (a) Discuss **THREE (3)** factors that can cause warp breakages in weaving operation. (6 marks)
- (b) By comparing between air-jet and water-jet looms, decide the best loom to produce 100% cotton denim fabric. Give your reasons. (2 marks)
- (c) The yarn width in the reed is 105 cm and the shuttle length, with the curved ends neglected, is 35 cm. The loom speed is 220 picks per minutes, and 110° of crankshaft rotation are available for shuttle traverse through the shed. Shuttle retardation is 950 cm/s^2 . Calculate the following:
- (i) Mean velocity
 - (ii) Maximum velocity
 - (iii) Minimum velocity before entering shuttle box
- (12 marks)

- Q3** (a) Explain how temple is useful to prevent end breakages at the selvages.
(3 marks)
- (b) List **THREE (3)** advantages and **THREE (3)** disadvantages of jacquard shedding compared to other shedding systems.
(6 marks)
- (c) Write short notes on the following subjects:-
(i) Reason that limits the number of cams on a weaving machine.
(ii) Does the choice of shedding system depend on fabric style
(iii) Two (2) differences between negative and positive dobby
(8 marks)
- (d) Why are projectile weaving machines very suitable for industrial textiles.
(3 marks)
- Q4** (a) List **THREE (3)** factors that effects the efficiency of on an air-jet nozzle.
(3 marks)
- (b) Explain briefly **TWO (2)** advantages and **TWO (2)** disadvantages of air-jet of weft insertion.
(4 marks)
- (c) What are the main physical differences between an air-jet and water-jet that affect the flight of the yarn.
(3 marks)
- (d) Explain the working principle of the torsion bar mechanism.
(4 marks)
- (e) Compare the performance of the following yarns in air-jet weaving. Assume that the yarns have the same count.
(i) Ring spun yarn
(ii) Textured yarns
(iii) Monofilament yarn
(6 marks)

- Q5** (a) Explain the differences between “balanced shed” and “unbalance shed”.
(2 marks)
- (b) Discuss **TWO (2)** important factors of balance tension between take-up and warp let-off section.
(4 marks)
- (c) What are the disadvantages of forming a woven fabric, when beating-up during open shed?
(4 marks)
- (d) Calculate the number of looms required to weave 150,000 meters fabric in one month, if a machine runs at 550 picks/min, 90% efficiency, 3 shifts a day, 24 working days a month and 25 picks/cm.
(10 marks)

- END OF QUESTION -