2nd SEM. 2015/2016

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME	:	BACHELOR OF SCIENCE IN TEXTILE APPAREL DESIGN and MANAGEMENT YEAR II
COURSE CODE	:	TADM 206
TITLE OF PAPER	:	FABRIC CONSTRUCTION
TIME ALLOWED	:	TWO (2) HOURS
INSTRUCTIONS	:	ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS

DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED BY THE CHIEF INVIGILATOR

QUESTION 1 (COMPULSORY)

a) Give a detailed explanation of Rotor spinning under the following subheadings **(12 Marks)**

i. Sliver feed
ii. Sliver opening
iii. Fibre transport
iv. Fibre collection
v. Yarn formation
vi. Yarn take off and winding

b) A cotton fabric is woven from 18tex warp and 21tex weft. The fabric has 28 ends/ cm and 25 picks/ cm, and the warp and weft crimp percentages are 2.5 and 9.0 % respectively. Calculate the areal density (fabric weight g/m^2) **(10 Marks)**

c) Using diagrams explain the knitting action of a latch hook needle in weft knitting. **(15 Marks)**

d) Name three weft knitting base structures **(3 Marks)**

[40 MARKS]

QUESTION 2

a) With the aid of a properly labelled diagram, explain the cotton carding process in spinning. **(20 Marks)**

b) Differentiate between woven and knitted fabrics **(5x2=10 Marks)**

[30 MARKS]

QUESTION 3

a) Give **two (2)** reasons why there has been a need for alternative spinning methods to ring-spinning? **(4 Marks)**

b) What are some of the requirements for warping? **(5x2= 10 Marks)**

c) Give a detailed explanation of the following
i. sectional warping
ii. direct warping **(2x3= 6 Marks)**

d) The length of a fabric is *10 m*. The length of a warp yarn, removed from the fabric, in straight condition is *10.8 m*. Determine the crimp% in the warp direction. What should be contraction %? **(10 Marks)**

[30 MARKS]

QUESTION 4

a) State and explain the primary motions of weaving **(10 Marks)**

b) What are the objectives of drawing in spinning? **(5 Marks)**

c) Briefly explain the drawing operation in a drawframe machine **(5 Marks)**

d) Calculate the production (calculated and actual) per hour of a loom running at a speed of 192 r.p.m. with an efficiency of 75%. The number of picks inserted per inch in the cloth is 80. **(6 Marks)**

e) Give **two (2)** reasons why warp knitting may not be suitable for apparel products **(4 Marks)**

[30 MARKS]