

Ph. D. ENTRANCE TEST (PET) 2025

Signature of Invigilator

Roll.
No.

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Paper - II
Textile Engineering

Maximum Marks: 50

No. Of Printed Pages: 8

Instruction for the Candidate:

1. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
2. There is no Negative Marking for Wrong Answer.
3. A separate OMR Answer Sheet has been provided to answer questions. Your answers will be evaluated based on your response in the OMR Sheet only. No credit will be given for any answering made in question booklet.
4. Defective question booklet or OMR if noticed may immediately replace by the concerned invigilator.
5. Write roll number, subject code, booklet type, category and other information correctly in the OMR Sheet else your OMR Sheet will not be evaluated by machine.
6. Select most appropriate answer to the question and darken appropriate oval on the OMR answer sheet, with black / blue ball pen only. **DO NOT USE PENCIL** for darkening. In case of over writing on any answer, the same will be treated as invalid. Each question has exactly one correct answer and has four alternative responses (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
Example: (A) ● (B) ● (C) ● (D) ● where (B) is correct response.
7. Rough Work is to be done in the end of this booklet.
8. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
9. Calculators, Log tables any other calculating devices, mobiles, slide rule, text manuals etc are **NOT** allowed in the examination hall. If any of above is seized from the candidates during examination time; he/ she will be immediately debarred from the examination and corresponding disciplinary action will be initiated by the Center Supervisor as deemed fit.
10. **DO NOT FOLD** or **TEAR** OMR Answer sheet as machine will not be able to recognize torn or folded OMR Answer sheet.
11. **You have to return the OMR Answer Sheet to the invigilator at the end of the examination compulsorily** and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet on conclusion of examination.

Paper - II
Textile Engineering

Note: This paper contains **FIFTY (50)** multiple-choice questions. Each Question carries **ONE (1)** mark.

- Q.1 Percentage Hank meter gain for the ring frame operating at front roller surface speed of 625 m/hr. and having Hank meter record of 0.75 hanks /hr. is
(A) 6.5 (B) 7.9
(C) 8.5 (D) 5.3
- Q.2 Noil percentage for a super combed yarn is
(A) 15- 20% (B) 10- 15%
(C) 20- 30% (D) 5- 10%
- Q.3 According to SITRA norms; Combined waste value for B.R. & Card for the cotton mix having trash content of 4.5% is;
(A) 9.5% (B) 10.5%
(C) 8.5% (D) 5.5%
- Q.4 The trash% in scutcher lap is 3% and in mixing 6% , the cleaning efficiency of the blow room line is
(A) 30% (B) 60%
(C) 40% (D) 50%
- Q.5 According to guideline, the optimum comber waste level should be -
(A) 1.5 times the short fiber percentage (B) Twice the short fiber percentage
(C) Half the times short fiber percentage (D) Equals to short fiber percentage
- Q.6 The system whose product is NOT a doubled yarn is-
(A) T.F.O. (B) Self-twist spinning
(C) Twillo (D) Siro spinning
- Q.7 If Ring flange width is 4.1 mm, its Ring Flange Number will be-
(A) 2.5 (B) 2.0
(C) 1.5 (D) 3.0
- Q.8 According to spinning geometry, the ratio of ring diameter (R) to tube length (l_k) should be-
(A) 0.15 (B) 0.2
(C) 0.75 (D) 0.5
- Q.9 Most of the seed coat particles are removed at the
(A) Blow room (B) Comber
(C) Card (D) Ginning
- Q.10 Fancy yarn contains prominent bunches of one component of thread arranged either at regular or irregular intervals of the length.
(A) Snarl Yarn (B) Diamond Yarn
(C) Gimp Yarn (D) Knop yarn
- Q.11 This is NOT a method used for condensing the fiber strand in compact spinning
(A) Electrostatic (B) Aerodynamic
(C) Magnetic (D) Mechanical
- Q.12 Spinning technique that produces core and sheath yarn is-
(A) Twist less Spinning (B) Dref III Spinning
(C) Electro-static Spinning (D) Self twist Spinning
- Q.13 Setting on the comber done to synchronize cylinder angular position with respect to Index wheel fashioned on the cylinder shaft
(A) Detaching setting (B) Depth setting
(C) Erection setting (D) Distance setting

- Q.14 The bobbin in a flyer frame rotates:
- (A) Only when winding occurs (B) Slower than the flyer
 (C) Faster than the flyer (D) At the same speed as the flyer
- Q.15 While spinning 65^s Ne with front roller overhang 2mm, 3 mm, 4 mm and 6mm; the correct order of spinning angle (θ) formed is
- (A) $\theta_{2\text{mm}} = \theta_{3\text{mm}} = \theta_{4\text{mm}} = \theta_{6\text{mm}}$ (B) $\theta_{2\text{mm}} < \theta_{4\text{mm}} < \theta_{3\text{mm}} < \theta_{6\text{mm}}$
 (C) $\theta_{2\text{mm}} < \theta_{3\text{mm}} < \theta_{4\text{mm}} < \theta_{6\text{mm}}$ (D) $\theta_{6\text{mm}} < \theta_{4\text{mm}} < \theta_{3\text{mm}} < \theta_{2\text{mm}}$
- Q.16 The micronaire value in cotton is related to:
- (A) Fibre strength (B) Fibre length
 (C) Fineness and maturity (D) Moisture content
- Q.17 Wool is composed mainly of:
- (A) Collagen (B) Keratin
 (C) Chitin (D) Cellulose
- Q.18 What is the denier range for natural silk?
- (A) 0.5–2 (B) 1–5
 (C) 5–10 (D) 10–20
- Q.19 The term "tenacity" in fibres is measured in:
- (A) g/m (B) N/cm
 (C) g/tex (D) tex
- Q.20 What is the general structure of a polyester polymer?
- (A) –CONH– (B) –COO–
 (C) –CH=CH– (D) –C=C–
- Q.21 In X-section, trilobal polyester provides:
- (A) Better crimp (B) Improved lustre
 (C) High moisture regain (D) Better dyeability
- Q.22 The drawing process in fibre production improves:
- (A) Fibre crimp (B) Molecular alignment
 (C) Colour fastness (D) Spinnability
- Q.23 The term "decitex" is equivalent to:
- (A) 10 tex (B) 0.1 tex
 (C) 1 tex (D) 100 tex
- Q.24 What is the function of titanium dioxide in synthetic fibres?
- (A) Softener (B) Flame retardant
 (C) Delustrant (D) Brightener
- Q.25 The natural fibre with the highest tensile strength is:
- (A) Cotton (B) Coir
 (C) Ramie (D) Flax
- Q.26 Modal is a modified version of:
- (A) Polyester (B) Viscose
 (C) Nylon (D) Acrylic
- Q.27 Bamboo fibre is categorized as:
- (A) Natural cellulose fibre (B) Synthetic fibre
 (C) Regenerated cellulose fibre (D) Protein fibre

- Q.28 Carbon fibre is made from:
 (A) Acrylic fibre (B) Viscose fibre
 (C) Polypropylene (D) Rayon
- Q.29 Which fibre is flame resistant by nature?
 (A) Wool (B) Cotton
 (C) Nylon (D) Polyester
- Q.30 The byproduct of polycondensation process of PET polymer is:
 (A) Water (B) Methanol
 (C) DGT (D) MEG
- Q.31 The sequence of conversion of PAN to carbon fibre is:
 (A) Oxidation, Carbonization, Sizing, Surface treatment (B) Oxidation, Carbonization, Surface treatment, Sizing
 (C) Carbonization, Surface treatment, Oxidation, Sizing (D) Carbonization, Oxidation, Surface treatment, Sizing
- Q.32 The Meltblown technology extrudes _____ viscosity polymer melt through fine capillaries
 (A) High (B) Low
 (C) Moderate (D) Very high
- Q.33 Desizing of cotton fabric is mainly done to
 (A) Increase fabric whiteness (B) Remove starch or sizing agents
 (C) Remove waxes (D) Reduce weight
- Q.34 Mercerization of cotton is carried out in
 (A) Sulphuric acid (B) Sodium hydroxide
 (C) Sodium carbonate (D) Acetic acid
- Q.35 Vat dyes are made soluble in water by
 (A) Acid treatment (B) Alkaline hydrolysis
 (C) Reduction (D) Oxidation
- Q.36 During testing, in a specimen, force will be maximum at.....
 (A) Yield point (B) Breaking point
 (C) Modulus point (D) Initial point
- Q.37 Drape is related with _____ and _____.
 (A) Twist & Stiffness (B) Count & Bending length
 (C) Shear & Bending length (D) Crimp & Crease
- Q.38 When the fabric is stretched in axial direction. It is known as
 (A) Tensile strength (B) Bursting strength
 (C) Tear strength (D) Impact strength
- Q.39 If the moisture regain of a fibre is 10%, its moisture content (%) is
 (A) 9.08 to 9.1 (B) 9.1 to 9.8
 (C) 9.8 (D) None of the above
- Q.40 Tear strength of a fabric is higher for
 (A) Plain weave (B) 2/1 twill
 (C) 3/1 twill (D) 7 end satin
- Q.41 Fabric cover on a loom is improved by
 (A) Late Shedding (B) Late Picking
 (C) Raising the back rest (D) Early Shedding

- Q.42 Sley velocity in m/s at the front centre of the loom is
 (A) 0 (B) 30
 (C) 60 (D) 90
- Q.43 CSP of yarn is equal to the product of
 (A) Yarn tex & lea strength (N) (B) Yarn tex & lea strength (Lbs)
 (C) Yarn count & lea strength (lb) (D) Yarn count & lea strength (kgs)
- Q.44 For random distribution of faults, what is the relationship between PMD and CV?
 (A) $CV = PMD$ (B) $CV = 1.25 \times PMD$
 (C) $PMD = 12.5 \times CV$ (D) $PMD = 1.25 \times CV$
- Q.45 The Dobby mechanism is primarily used for
 (A) Let-off (B) Take-up
 (C) Shedding (D) Picking
- Q.46 The typical method to determine fiber maturity is
 (A) HRD meter (B) Uster meter
 (C) Colorimeter (D) Caustic soda swelling
- Q.47 The lower the yarn evenness CV%,
 (A) Higher the yarn regularity (B) Lower the yarn regularity
 (C) Higher yarn hairiness (D) Lower the yarn count
- Q.48 Ballistic resistance in protective fabric is evaluated by
 (A) UTM (B) 3 point bending
 (C) 4 point bending (D) High velocity projectile test
- Q.49 Fabric porosity is influenced most by
 (A) Stitch density (B) Yarn linear density
 (C) Weave structure (D) All of the above
- Q.50 The comfort factor of fabric is typically related to
 (A) Yarn count (B) Yarn twist
 (C) Air permeability (D) Fabric weight

Rough Work: