

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

Ph. D. ENTRANCE TEST (PET) – 7th August 2022

Signature of Invigilator

Roll.
No.

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Paper - II
Textile Engineering (22/41)

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) (●) (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 (22/41)

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

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| <p>01) The % concentration of CS₂ in xanthation process during manufacturing of viscose rayon fibre is:
A) 10
B) 12
C) 22
D) 32</p> <p>02) The cross section of a silk filament is:
A) Circular
B) Oval
C) Triangular
D) Bean shape</p> <p>03) The byproduct of polycondensation process of PET polymer is:
A) Water
B) Methanol
C) DGT
D) MEG</p> <p>04) _____ organic solvent is used for the preparation of Polyacrylonitrile spinning solution:
A) Nitric Acid
B) Dimethylsulphoxide
C) Zinc chloride
D) Sodium thiocyanate</p> <p>05) The glass transition temperature of polyester fibre is:
A) 50
B) 60
C) 70
D) 80</p> <p>06) The sequence of conversion of PAN to carbon fibre are:
A) Oxidation, Carbonization, Sizing, Surface treatment
B) Oxidation, Carbonization, Surface treatment, Sizing
C) Carbonization, Surface treatment, Oxidation, Sizing
D) Carbonization, Oxidation, Surface treatment, Sizing</p> <p>07) In DSC curve, the glass transition peak is:
A) Exothermic
B) Endothermic
C) A & B
D) None of the above</p> | <p>08) Inner layer morphology of fibre is studied through:
A) DSC
B) Optical Microscope
C) SEM
D) TEM</p> <p>09) Density of cotton fibre is:
A) More than glass
B) More than nylon but less than glass
C) Same as Kevlar
D) More than polypropylene but less than Kevlar</p> <p>10) Which of the following is extremely sensitive to photo degradation?
A) Polypropylene
B) Polyester
C) Nylon
D) Cotton</p> <p>11) The range of spinning speed (m/min) used in the manufacture of Low oriented polyester yarn is:
A) 500-1500
B) 2000-2600
C) 3000-3800
D) 4000-6000</p> <p>12) The following fibre is known as eco-friendly fibre:
A) Polypropylene
B) Visocose Rayon
C) Polyester
D) Polynosic</p> <p>13) The Meltblown technology extrudes _____ viscosity polymer melt through fine capillaries
A) High
B) Low
C) Moderate
D) Very high</p> <p>14) The process for sanforization is used for
A) Improvement in strength
B) Dimensional stability
C) Improvement in stiffness
D) Improvement in crease recovery</p> |
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- 15) If number of lengthwise diamonds seen in a close step precision wound package is 9.5 and circumferential diamonds is 2, actual traverse ratio can be
 A) 9.7511
 B) 9.4911
 C) 9.2491
 D) 9.8033
- 16) In a step precision wound package
 A) Coil angle varies over a narrow range
 B) Coil angle remains constant
 C) Traverse ratio remains constant
 D) None of these
- 17) In a rotary traverse yarn is traversed by-
 A) Grooved cam
 B) Counter rotating blades
 C) Flyer
 D) Grooved drum
- 18) Single end sizing technique is used for
 A) Multifilament yarns
 B) Ring spun yarns
 C) Rotor spun yarns
 D) Self twist yarns
- 19) Roller reversing motion for shedding mechanism cannot be used for
 A) 5 thread sateen
 B) 3/2 twill
 C) 2/3 twill
 D) Honeycomb on 8x8
- 20) During dwell period shedding cam profile has
 A) Greater thickness
 B) Greater hardness
 C) Constant radial distance from its center of rotation
 D) Smaller thickness
- 21) Number of projectiles required in a projectile loom depends upon
 A) Fabric gsm
 B) Ends/cm
 C) Reed width
 D) Picks per cm
- 22) Cam drive to sley is must on Sulzer projectile because
 A) Of high projectile speed
 B) Of low mass of projectile
 C) Of use of steel projectile
 D) Picking system does not move to and fro with sley
- 23) Size add-on in warp sizing is Not influenced by-
 A) Temperature of Drying zone
 B) Viscosity of size paste
 C) Machine speed
 D) Squeezing Roller hardness
- 24) Free flight rapiers are
 A) Flexible rapiers with light weight rapier guides
 B) Rigid rapiers without the need of rapier guides
 C) Flexible rapiers without the need of rapier guides in the shed
 D) Rapiers suitable for coarse wefts
- 25) In a precision winding machine, required traverse ratio can be obtained by changing
 A) Yarn tension
 B) Gear ratio between bobbin shaft and cam shaft
 C) Winding speed
 D) None of the above
- 26) Which class among A3, B3, C3 and D3 in UsterClassimat yarn fault classification system has the longest fault length?
 A) A4
 B) B4
 C) E4
 D) C4
- 27) The projectile with big cross section and large clamping surface is-
 A) D1
 B) D2
 C) D12
 D) None of these
- 28) Picking of high twist weft is difficult on –
 A) Air jet loom
 B) Projectile loom
 C) Flexible rapier loom
 D) Rigid rapier loom

- 29) Electronic jacquards form open shed due to
 A) Electro-magnetic selection
 B) High speed operation
 C) Light weight hooks
 D) Use of pulley principle
- 30) For 6 up 4 down working order for a rotary dobby, for how many times in a repeat eccentric will rotate by half rotation?
 A) 2 times
 B) 6 times
 C) 4 times
 D) 3 times
- 31) Which basic weft knit structure exhibits the highest widthwise extensibility?
 A) purl
 B) interlock
 C) rib
 D) Single jersey
- 32) Term “casting-out” is associated with –
 A) Positive shedding
 B) Dobby shedding
 C) Cam shedding
 D) Jacquard shedding
- 33) In a 5-pick terry, number of loose picks are
 A) 2
 B) 3
 C) 4
 D) 1
- 34) Pick finding is carried out after loom stoppage due to-
 A) Warp protector motion
 B) Warp stop motion
 C) Weft stop motion
 D) None of these
- 35) While spinning 65^s Ne with front roller overhang 2mm, 3 mm, 4 mm and 6mm; the correct order of spinning angle (\emptyset) formed is
 A) $\emptyset_{2\text{mm}} = \emptyset_{3\text{mm}} = \emptyset_{4\text{mm}} = \emptyset_{6\text{mm}}$
 B) $\emptyset_{2\text{mm}} < \emptyset_{4\text{mm}} < \emptyset_{3\text{mm}} < \emptyset_{6\text{mm}}$
 C) $\emptyset_{2\text{mm}} < \emptyset_{3\text{mm}} < \emptyset_{4\text{mm}} < \emptyset_{6\text{mm}}$
 D) $\emptyset_{6\text{mm}} < \emptyset_{4\text{mm}} < \emptyset_{3\text{mm}} < \emptyset_{2\text{mm}}$
- 36) Speed of 2 inch (5.08 cm) diameter rotor is 50,000 rpm & yarn is produced at 2000 inch/min then Number of layers in fiber ring is
 A) 157
 B) 165
 C) 141
 D) 170
- 37) Eighty percent yarn realization obtained for carded yarn produced out of 6% trashy cotton, then Ring spinning performance according to SITRA guideline can be graded as
 A) Very good
 B) Poor
 C) Satisfactory
 D) Good
- 38) System designed for ensured amount of trash extraction with considerably reduced lint loss at Modern Blow room is-
 A) Piano feed
 B) Vario Set
 C) Spider web
 D) Bale plucker
- 39) According to SITRA norms; Combined waste value for B.R. & Card for the cotton mix having trash content of 3.25%
 A) 8.25%
 B) 6.5%
 C) 3.25%
 D) 10.5%
- 40) Machinery Audit tool used for the measurement of top arm pressure at Ring frame is
 A) Stroboscope
 B) Peri microscope
 C) TARP gauge
 D) Nilo-meter
- 41) Maximum utilization of Cylinder combing area became possible on Modern comber due to
 A) Hanging pendulum mode of the nipper assembly
 B) Standing suspension mode of the nipper assembly
 C) Rotating Pendulum mode of the nipper assembly
 D) Stationary mode of the nipper assembly

- 42) Most of the seed coat particles are removed at the
- A) Comber
 - B) Blow room
 - C) Draw frame
 - D) Card
- 43) According to balloon theory spinning stability can be sustained only if balloon height (H)
- A) $= \pi P$
 - B) $< \pi P$
 - C) $> \pi P$
 - D)

Rough Work: