**THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA**

# Ph. D. ENTRANCE TEST (PET) 2023

**Signature of Invigilator** _____

**Roll. No.** | | | | | | |

## 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:** Ⓐ ● Ⓒ Ⓓ 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 | Spinning technique that produces fasciated yarn is- | | | |
| | (A) | Rotor Spinning | (B) | Friction Spinning |
| | (C) | Air Jet Spinning | (D) | Self twist Spinning |
| Q.2 | If Ring flange width is 4.1 mm, its Ring Flange Number will be- | | | |
| | (A) | 2.0 | (B) | 1.0 |
| | (C) | 1.5 | (D) | 2.5 |
| Q.3 | The process most likely to be responsible for the presence of an excessive difference between the number of thick and thin places in the yarn is | | | |
| | (A) | Draw frame | (B) | Ring frame |
| | (C) | Speed frame | (D) | Card |
| Q.4 | System designed at Blow room for ensured amount of trash extraction with considerably reduced lint loss is- | | | |
| | (A) | Piano feed | (B) | VarioSet |
| | (C) | Spider web | (D) | Servo grip |
| Q.5 | According to guideline, the optimum comber waste level should be - | | | |
| | (A) | Equals to short fiber percentage | (B) | 1.5 times the short fiber percentage |
| | (C) | Twice the short fiber percentage | (D) | Half the times short fiber percentage |
| Q.6 | Rotor Speed required to spin 25 tex yarn with twist factor of 40 at the delivery rate of 80 m/min is- | | | |
| | (A) | 60, 000 rpm | B | 70,000 rpm |
| | (C) | 64, 000 rpm | D | 74,000 rpm |
| Q-7 | Higher HOK of ring spinning is attributed to - | | | |
| | (A) | Higher Excessive Operative Per Day | (B) | Lower Operative Hours per 1000 Spindle hours |
| | (C) | Higher standardize Production | (D) | Higher Spindle Utilization Efficiency |
| Q-8 | Most of the seed coat particles are removed at the | | | |
| | (A) | Comber | (B) | Blow room |
| | (C) | Draw frame | (D) | Card |
| Q-9 | The highest fiber alignment is found during carding process in between | | | |
| | (A) | Licker in and Cylinder region | (B) | Cylinder and Doffer region |
| | (C) | Flat and Cylinder region | (D) | Cylinder and cylinder under casing |
| Q-10 | According to balloon theory spinning stability can be sustained only if balloon height (H)- | | | |
| | (A) | $= \pi P$ | (B) | $< \pi P$ |
| | (C) | $> \pi P$ | (D) | $\leq \pi P$ |
| Q-11 | Degree of Polymerization in cotton is of the order of= | | | |
| | (A) | 500 | (B) | 3, 000 |
| | (C) | 100 | (D) | 10, 000 |
| Q-12 | Thermal properties of textile material can be determined by- | | | |
| | (A) | Infrared Spectroscopy | (B) | Scanning Electron Microscopy |
| | (C) | Differential Scanning Calorimeter | (D) | X-ray Diffraction |
| Q-13 | Birefringence of filament yarn is related to its- | | | |
| | (A) | Orientation | (B) | Crystallinity |
| | (C) | Density | (D) | Individual filament denier |
| Q-14 | In melt pinning, the melting of solid polymer and its homogenization takes place in - | | | |
| | (A) | Manifold | (B) | Extruder |
| | (C) | Metering pump | (D) | Quench duct |
| Q-15 | The blending technique that gives the most homogeneous mixing of fibers is- | | | |
| | (A) | Tuft blending | (B) | Sliver blending |
| | (C) | Lap blending | (D) | Roving blending |

| | | | | |
|---|---|---|---|---|
| Q-16 | Term POY stands for | | | |
| | (A) | Permanent oriented yarn | (B) | Primary oriented yarn |
| | (C) | Partially oriented yarn | (D) | None of these |
| Q-17 | The synthetic fiber with lowest meting point is- | | | |
| | (A) | Kevlar | (B) | Nylon 6,6 |
| | (C) | Polypropylene | (D) | Polyester |
| Q-18 | Drawback associated with disc type of tensioners is- | | | |
| | (A) | Magnification of input tension fluctuations | (B) | Sudden rise in outgoing yarn tension at arrival of thick place |
| | (C) | Threading is difficult | (D) | None of these |
| Q-19 | Term retting is associated with processing of- | | | |
| | (A) | Silk | (B) | Wool |
| | (C) | Jute | (D) | Lanital |
| Q-20 | Tester used to measure crimp properties of false twist textured yarn in dynamic mode- | | | |
| | (A) | Texturemate | (B) | Microscope |
| | (C) | TYT tester | (D) | HCC tester |
| Q-21 | At 15 places yarn fault was present out of 20 breaks caused by yarn clearer. Knot factor of yarn clearer is- | | | |
| | (A) | 75 % | (B) | 1.33 |
| | (C) | 25% | (D) | 0.75 |
| Q-22 | Difference between Primary heater and Secondary heater temperatures for getting high bulk and low stretch false twist textured yarn should be- | | | |
| | (A) | Low | (B) | Zero |
| | (C) | High | (D) | None of the above |
| Q-23 | Single end sizing technique is used for | | | |
| | (A) | Multifilament yarns | (B) | Ring spun yarns |
| | (C) | Rotor spun yarns | (D) | Self twist yarns |
| Q-24 | During friction disc texturizing value of tension ratio ($T_2/T_1$) becomes- | | | |
| | (A) | Greater than 1 | (B) | Equals to 1 |
| | (C) | Less than 1 | (D) | Equals to 2.2 |
| Q-25 | Classification of a yarn fault as nep on Uster evenness tester is based on the fault length of - | | | |
| | (A) | 4 mm | (B) | 6 mm |
| | (C) | 8 mm | (D) | 2 mm |
| Q-26 | Sley dwell on a projectile loom depends upon- | | | |
| | (A) | Fabric GSM | (B) | Loom width |
| | (C) | Weft linear density | (D) | Warp tension |
| Q-27 | Roller reversing motion for shedding mechanism cannot be used for- | | | |
| | (A) | 5 thread sateen | (B) | 3/2 twill |
| | (C) | 2/3 twill | (D) | 3/2 irregular hopsack |
| Q-28 | Weft density doubles at selvedges in case of- | | | |
| | (A) | Half cross leno selvedge | (B) | Full cross leno selvedge |
| | (C) | Hopsack Selvedge | (D) | Tucked in selvedge |
| Q-29 | The fault created at cop change due to insufficient bunch on pirn on a cop changing loom with side weft fork motion is- | | | |
| | (A) | Double pick | (B) | Partial pick |
| | (C) | Stop mark | (D) | Periodic pick spacing variation |
| Q-30 | The property that Kawabata Evaluation System (KES) DOES NOT measure is- | | | |
| | (A) | Bending rigidity | (B) | Shear rigidity |
| | (C) | Tensile strength | (D) | Compressional resilience |
| Q-31 | In CRL tests, which of the following statement is true? | | | |
| | (A) | Load is applied to the specimen at constant rate | (B) | Constant load is applied to the specimen |
| | (C) | None of above | (D) | Load is released at constant rate |

| | | | | |
|---|---|---|---|---|
| Q-32 | Instrument designed only for the measurement of cotton fiber trash characteristics- | | | |
| | (A) | HVI | (B) | AFIS |
| | (C) | Arealometer | (D) | MDTA |
| Q-33 | Size add-on in warp sizing is Not influenced by- | | | |
| | (A) | Temperature of Drying zone | (B) | Viscosity of size paste |
| | (C) | Yarn type | (D) | Squeezing Roller hardness |
| Q-34 | The dye suitable for the dyeing of Nylon based fabric- | | | |
| | (A) | Acid dye | (B) | Disperse dye |
| | (C) | Reacive dye | (D) | Vat dye |
| Q-35 | The winding mode in which traverse ratio progressively decreases with an increase in package diameter is- | | | |
| | (A) | Precision winding | (B) | Hybrid winding |
| | (C) | Random winding | (D) | None of the above |
| Q-36 | The duty factor is the harmonic mean of- | | | |
| | (A) | Ball toughness & Flex factor | (B) | Flat resistance & Ball toughness |
| | (C) | Ball toughness, Flat resistance & Flex factor | (D) | Flat resistance & Flex factor |
| Q-37 | Normally adopted speed range for fabric inspection is- | | | |
| | (A) | 0 to 25 m/min | (B) | 0 to 100 m/min |
| | (C) | 0 to 10 m/min | (D) | 0 to 50 m/min |
| Q-38 | Twist value of unconventional spun yarn is preferably measured by | | | |
| | (A) | Fiber parallelization | (B) | Twist contraction method |
| | (C) | Twist to break method | (D) | Optical method |
| Q-39 | The system whose product is NOT a doubled yarn is- | | | |
| | (A) | Self-twist spinning | (B) | T.F.O. |
| | (C) | Siro spinning | (D) | Twillo |
| Q-40 | Efficacy of Wash- n- wear fabric require testing for | | | |
| | (A) | Crease recovery | (B) | Tensile Strength |
| | (C) | Bending Length | (D) | Air permeability |
| Q-41 | Kind of tensile strength tester preferred for filament yarns is- | | | |
| | (A) | Instron | (B) | Stelometer |
| | (C) | Pressley | (D) | Automatic Lea tetser |
| Q-42 | Cellulosic fiber that is obtained from the leaves is: | | | |
| | (A) | Cotton | (B) | Jute |
| | (C) | Sisal | (D) | Lanital |
| Q-43 | Ring spun yarns; $36^s$,$81^s$, $25^s$and $64^s$ Ne have 24 tpi (twist per inch). The yarn with maximum fiber obliquity is- | | | |
| | (A) | $36^s$ Ne | (B) | $81^s$ Ne |
| | (C) | $64^s$ Ne | (D) | $25^s$ Ne |
| Q-44 | Asymmetric shedding can be achieved by adjusting position of- | | | |
| | (A) | Reed | (B) | Race board |
| | (C) | Front rest | (D) | Back rest |
| Q-45 | Type of abrasion resistance test used for the assessment of performance of cuff in shirts is- | | | |
| | (A) | Flat | (B) | Flex |
| | (C) | Edge | (D) | None of the above |
| Q-46 | Cotton is said to be difficult to clean with cotton factor of | | | |
| | (A) | 0.3 | (B) | 1.1 |
| | (C) | 0.6 | (D) | 2.0 |
| Q-47 | Proportion of crystalline material present in cotton is about- | | | |
| | (A) | $1/3$ | (B) | $1/2$ |
| | (C) | $2/3$ | (D) | $3/4$ |

| | | | | |
|---|---|---|---|---|
| Q-48 | Desizing of grey cotton fabric sized with starch base size is not possible with- | | | |
| | (A) | Amylaze Enzyme | (B) | DMDHEU |
| | (C) | Hydrogen Peroxide | (D) | Dilute HCL |
| Q-49 | The characteristics wave formed by light scatter by an individual fiber during AFIS test is- | | | |
| | (A) | Triangular | (B) | Spiked |
| | (C) | Rectangular | (D) | Elliptical |
| Q-50 | Index of irregularity for the best possible yarn should be | | | |
| | (A) | 1.25 | (B) | 1.0 |
| | (C) | 1.50 | (D) | 1.11 |

**********

**Rough Work:**