

FINAL ANSWER KEY

Question Paper Code:	39/2019/OL
Category Code:	430/2017
Exam:	Lecturer in Textile Technology(NCA)
Medium of Question:	English
Date of Test	27-08-2019
Department	Technical Education
Alphacode	A

Question1:-The power consumed by an ac series circuit is maximum when its power factor is

- A:-0
- B:-1
- C:-0.5
- D:-0.8

Correct Answer:- Option-B

Question2:-The protective measure to avoid electric shock while touching electrical appliances is

- A:-Switch
- B:-Fuse
- C:-Lightning arrester
- D:-Earthing

Correct Answer:- Option-D

Question3:-What is the unit of apparent power?

- A:-Watt-hour
- B:-Watt-sec
- C:-VA
- D:-Watts

Correct Answer:- Option-C

Question4:-In an R-C series circuit, the voltage across each element is 50V. The applied voltage is ----

- A:-100V
- B:-70.71v
- C:-57.23V
- D:-50V

Correct Answer:- Option-B

Question5:-What is the effective resistance of a parallel combination of 2 Ω , 3 Ω and 6 Ω

- A:-1 Ω
- B:-11 Ω
- C:-2 Ω
- D:-3 Ω

Correct Answer:- Option-A

Question6:-Choose the correct statement

- A:-The CFL bulb is an incandescent one.
- B:-LED bulbs are more efficient than CFL bulbs in terms of power and life.
- C:-LED bulbs are cheaper than CFL bulbs
- D:-CFL bulbs remain cool, when operated

Correct Answer:- Option-B

Question7:-Which of the following is not a constituent of an electro mechanical relay?

- A:-Spring
- B:-Pivot
- C:-Armature
- D:-Transformer

Correct Answer:- Option-D

Question8:-The 8051 micro controller has a data memory of

- A:-128 byte RAM
- B:-128 byte ROM
- C:-128 kilobyte RAM
- D:-128 kilobyte ROM

Correct Answer:- Option-A

Question9:-The modulation used in GSM is

A:-Gaussian Minimum Shift Keying (GMSK)

B:-Amplitude Shift Keying (ASK)

C:-Binary Phase Shift Keying (BPSK)

D:-Quaternary Phase Shift Keying (QPSK)

Correct Answer:- Option-A

Question10:-Which of the following e waste component poses a health hazard?

A:-Lead

B:-Mercury

C:-Cadmium

D:-All of the above

Correct Answer:- Option-D

Question11:-In internal combustion engine, the total energy losses due to pumping and friction converted into power is termed as

A:-Brake power

B:-Indicated power

C:-Friction power

D:-Total engine power

Correct Answer:- Option-C

Question12:-Which among the following statement is correct?

A:-In four-stroke engines, the cooling and lubrication requirement is lesser than in two-stroke engines.

B:-A lighter flywheel is needed for four-stroke engines than two-stroke engines.

C:-In two-stroke engines, volumetric efficiency is more due to greater time of induction.

D:-In four-stroke engines, in each revolution of the crankshaft, four power strokes are obtained.

Correct Answer:- Option-A

Question13:-The basic function of clutch is to

A:-support a moving element and to confine its motion

B:-transmit power from one shaft to other over considerable distances

C:-measure forces and energy

D:-control flow of mechanical power within a machine

Correct Answer:- Option-D

Question14:-In a thermal (steam) power plant, the feed water is preheated in -----

A:-Air preheater

B:-Economiser

C:-Condenser

D:-Boiler

Correct Answer:- Option-B

Question15:-In a hydroelectric power plant, the level of water stored in reservoir is known as -----

A:-Hydraulic head

B:-Tail water level

C:-Headrace

D:-Spillway level

Correct Answer:- Option-C

Question16:-A matrix A is said to be singular if

A:- $|A| \neq 0$

B:- $|A| = 0$

C:- $A^T = A$

D:- $A^{-1} = A$

Correct Answer:- Option-B

Question17:-Let $A = \begin{bmatrix} 1,2,3 \\ 0,5,0 \\ 2,4,3 \end{bmatrix}$.

The cofactor is 5 is

A:-0

B:-6

C:-3

D:-3

Correct Answer:- Option-D

Question18:-If $\Delta_1 = \begin{bmatrix} 1,0,0 \\ 2,3,0 \\ -1,5,-3 \end{bmatrix}$ and $\Delta_2 = \begin{bmatrix} -3,5,-1 \\ 0,3,2 \\ 0,0,1 \end{bmatrix}$, then

A:- $\Delta_1 = 2\Delta_2$

B:- $\Delta_1 = \Delta_2$

C:- $\Delta_1 = -\Delta_2$

D: $\Delta_1 = \Delta_2$

Correct Answer: Option-B

Question19: The coefficient of p^2q^3 in the expansion of $(2p-3q)^5$ is

A: -1080

B: -720

C: -720

D: -1080

Correct Answer: Option-A

Question20: $-\sin 390 \tan 30 + \sin 120$ is

A: $\frac{1}{2}$

B: $\frac{\sqrt{3}}{2}$

C: $\frac{2}{\sqrt{3}}$

D: -1

Correct Answer: Option-C

Question21: The equation of a straight line making an angle 135° with positive direction of x-axis and cutting an intercept 5 on y axis is

A: $y = x + 5$

B: $y = 5x + 1$

C: $y = 5 - x$

D: $y = 5x - 1$

Correct Answer: Option-C

Question22: $\lim_{x \rightarrow \infty} (1+x)^{1/x}$ is

A: ∞

B: e

C: -1

D: $\frac{1}{e}$

Correct Answer: Option-B

Question23: The sum of two numbers is 2. Find the smallest value possible for the sum of the square of one number and the cube of the other

A: -1.9354

B: -6

C: -2.9

D: -5.3583

Correct Answer: Option-A

Question24: $\int \frac{dx}{(4+x^2)^{3/2}}$ is

A: $\frac{3}{2} (4+x^2)^{1/2} + c$

B: $\frac{4}{\sqrt{4+x^2}} + c$

C: $\frac{x}{4\sqrt{4+x^2}} + c$

D: $\frac{x}{2} + c$

Correct Answer: Option-C

Question25: The solution of $\frac{dy}{dx} = \frac{y}{x(x+1)}$

A: $y(x+1) = c$

B: $xy = c(1+x)$

C: $x(x+y) = cy$

D: $y(x+1) = cx$

Correct Answer: Option-D

Question26: If A is a matrix then $A(\text{adj } A)$ is

A: $|A|$

B: A^{-1}

C: $|A| I$

D: I

Correct Answer: Option-C

Question27: Inverse of the matrix $A = \begin{bmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$ is

A: $\begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$

B: $\begin{bmatrix} -\cos \theta & -\sin \theta \\ \sin \theta & -\cos \theta \end{bmatrix}$

C: $\begin{bmatrix} \cos \theta & -\sin \theta \\ -\sin \theta & -\cos \theta \end{bmatrix}$

D: $\begin{bmatrix} -\cos \theta & \sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$

Correct Answer: Option-A

Question28: The value of x satisfying the following system is $2x - y + 33 = 8$; $-x + 2y + 3 = 4$; $3x + y - 43 = 0$

A:-2

B:-2

C:-4

D:-0

Correct Answer:- Option-B

Question29:-Co-efficient of x^2 in the series expansion of $\sqrt{4+x}$

A:-64

B:- $(-1)/(64)$

C:-512

D:- $(1)/(64)$

Correct Answer:- Option-D

Question30:- $\cos t + \tan t \sin t$ is

A:- $\cos t$

B:- $\sec t$

C:- $\operatorname{cosec} t$

D:- $\sec t$

Correct Answer:- Option-D

Question31:-The angle between the lines $y = \sqrt{3}x + 4$ and $y = (x)/\sqrt{3} + 2$

A:- 90°

B:- 60°

C:- 30°

D:- 0°

Correct Answer:- Option-C

Question32:-The points of discontinuity of $f(x) = |x - 1| - |x - 1|$ are

A:- $x = 0, 1$

B:- $x = 0$

C:- $x = 1$

D:-None of the above

Correct Answer:- Option-D

Question33:-The equation to tangent to the curve $f(x) = (x+2)(2x+1)^2$ at $x = -1$ is

A:- $y = 3x + 2$

B:- $y = 3 - 2x$

C:- $y = -3x - 2$

D:- $y = 2x + 3$

Correct Answer:- Option-C

Question34:- $\int \ln(x) dx$ is

A:- $\ln(x) + c$

B:- $(1)/(x) + c$

C:- $n \ln(x) + c$

D:- $x \ln(x) - x + c$

Correct Answer:- Option-D

Question35:-Solution of $(1+x^2)y' = x(1-y)$ is

A:- $y = 1 + (c)/\sqrt{1+x^2}$

B:- $y = \sqrt{1+x^2} + c$

C:- $y = 1 + c \sqrt{1+x^2}$

D:- $y \sqrt{1+x^2} = c$

Correct Answer:- Option-A

Question36:-What type of levelling is done if all the readings are taken with a single set up of Dumpy Level?

A:-Continuous Levelling

B:-Differential Levelling

C:-Compound Levelling

D:-Simple Levelling

Correct Answer:- Option-D

Question37:-Which among the following is called fine aggregate?

A:-Aggregates passing through 4.75mm IS sieve

B:-Aggregates retained on 4.75mm IS sieve

C:-Aggregates passing through 0.15mm IS sieve

D:-Aggregates retained on 0.15mm IS sieve

Correct Answer:- Option-A

Question38:-Which of the following is called a deep foundation?

- A:-Raft foundation
- B:-Combined footing
- C:-Well foundation
- D:-Trapezoidal footing

Correct Answer:- Option-C

Question39:-Which of the following is called as Beam section?

- A:-Rolled steel angle sections
- B:-TOR steel
- C:-Rolled steel tubes
- D:-Rolled steel I sections

Correct Answer:- Option-D

Question40:-Which instrument is used for setting right angles in a chain survey?

- A:-Plumb bob
- B:-Cross staff
- C:-Peg
- D:-Offset rod

Correct Answer:- Option-B

Question41:-Choose correct alternative from the followings:

- A:-For cotton fiber, longer the fiber, finer it is
- B:-For cotton fiber, longer the fiber, coarser it is
- C:-For cotton fiber, longer the fiber, more non-uniformity it gets
- D:-None of the above combinations

Correct Answer:- Option-A

Question42:-The hollow space in cotton is known as:

- A:-Lumen
- B:-Stomas
- C:-Medulla
- D:-Pores

Correct Answer:- Option-A

Question43:-With an increase of moisture content, the strength of a Nylon filament

- A:-Increases
- B:-Decreases
- C:-First increases then decreases
- D:-First decreases then increases

Correct Answer:- Option-B

Question44:-Which of the following fibers has excellent elastic recovery?

- A:-Cotton
- B:-Polyester
- C:-Nylon
- D:-Viscose

Correct Answer:- Option-C

Question45:-Which of the following fibres has excellent crease resistant?

- A:-Cotton
- B:-Polyester
- C:-Nylon
- D:-Viscose

Correct Answer:- Option-B

Question46:-Birefringence of a fibre is the measure of

- A:-Dynamic modulus
- B:-Density
- C:-Orientation
- D:-Crystallinity

Correct Answer:- Option-C

Question47:-The presence of functional groups in a fibre can be best determined by

- A:-IR spectroscopy
- B:-NMR spectroscopy
- C:-Differential scanning calorimeter
- D:-X-ray spectroscopy

Correct Answer:- Option-A

Question48:-Analysis of fiber structure by means of diffraction of electromagnetic waves is more compatible with x-rays than with ordinary visible light because

- A:-X-rays has higher energy than ordinary light
- B:-X-rays has wave lengths smaller than ordinary light
- C:-It is easy to get picture or photographs with x-rays
- D:-Wave lengths are comparable with crystallite sizes of fibre

Correct Answer:- Option-D

Question49:-Electromagnetic waves used in NMR spectroscopy is

- A:-Ultra-violet rays
- B:-Radio waves
- C:-Gamma rays
- D:-Infra-red rays

Correct Answer:- Option-B

Question50:-The helix reversal is found in

- A:-Jute
- B:-Wool
- C:-Silk
- D:-Cotton

Correct Answer:- Option-D

Question51:-If initial modulus and moment of inertia of a fibre are denoted by E and I, respectively, the bending rigidity of the fibre is expressed as

- A:-E/I
- B:-I/E
- C:-EI²
- D:-EI

Correct Answer:- Option-D

Question52:-Which one of the following statements is wrong?

- A:-The density is same for both cotton and viscose
- B:-The degree of polymerization is same for both cotton and viscose
- C:-Both cotton and viscose are hydrophilic fibres
- D:-Both cotton and viscose are the cellulosic fibres

Correct Answer:- Option-B

Question53:-Which one of the following statements is correct with respect to a textile fibre?

- A:-It is transversely isotropic
- B:-The primary bond strength is weaker than secondary bond.
- C:-Essentially it is made of short chain molecules.
- D:-It is having very high density.

Correct Answer:- Option-A

Question54:-Which one of the following statements is true?

- A:-Glass is 100% crystalline fibre.
- B:-Polypropylene is 100% amorphous fibre.
- C:-Cotton is 50% crystalline fibre.
- D:-Wool is 30% crystalline fibre.

Correct Answer:- Option-D

Question55:-Water acts as catalyst for the production of

- A:-Nylon 6
- B:-Acrylic
- C:-Viscose
- D:-Polyester

Correct Answer:- Option-A

Question56:-Which of the following fibre properties is not governed by its amorphous content?

- A:-Dye uptake
- B:-Moisture content
- C:-Extensibility
- D:-Friction

Correct Answer:- Option-D

Question57:-Which one of the following is the correct order in a DSC heating plot with increasing temperature?

- A:-Glass transition, crystallization, melting

B:-Melting, glass transition, crystallization

C:-Crystallization, glass transition, melting

D:-Glass transition, melting, crystallization

Correct Answer:- Option-A

Question58:-Which one of the synthetic filament properties is not controlled by the drawing?

A:-Orientation

B:-Crystallinity

C:-Birefringence

D:-Molecular weight

Correct Answer:- Option-D

Question59:-Which one of the following materials has highest strength/weight ratio?

A:-Steel

B:-Nylon

C:-Kevlar

D:-Polyester

Correct Answer:- Option-C

Question60:-Ziegler-Natta catalyst is essential for the production of

A:-Kevlar

B:-Polypropylene

C:-Acrylic

D:-Cellulose triacetate

Correct Answer:- Option-B

Question61:-If d is the fibre diameter, air-flow rate through a plug of fibres is proportional to

A:- \sqrt{d}

B:- d

C:- d^2

D:- d^3

Correct Answer:- Option-C

Question62:-For a square cut polyester staple fibre, length uniformity index is

A:-0.5

B:-0.5128

C:-0.5328

D:-1

Correct Answer:- Option-D

Question63:-INSTRON® tensile tester works on INSTRON^(o.)

A:-CRL principle

B:-CRE principle

C:-CRT principle

D:-CRS principle

Correct Answer:- Option-B

Question64:-As the time to beak increases

A:-Yarn strength decreases

B:-Yarn strength increase

C:-Yarn strength does not change

D:-Yarn strength first decreases and then increases

Correct Answer:- Option-A

Question65:-Most suitable test for parachute fabric is

A:-Tensile strip strength

B:-Bursting strength

C:-Tearing strength

D:-Tensile grab strength

Correct Answer:- Option-B

Question66:-Three varieties of cotton fibres of 4.5, 5 and 4.0 micronaire values are blended in weight proportions of 30%, 20% and 50%, respectively. The average micronaire value of mixing is

A:-4.32

B:-4.35

C:-4.40

D:-4.34

Correct Answer:- Option-A

Question67:-If the front top roller of a ring frame having diameter of 1 inch becomes eccentric, at what wave length of spectrogram do you expect a peak?

- A:-8 cm
- B:-2.54 cm
- C:-4 cm
- D:-1.27 cm

Correct Answer:- Option-A

Question68:-8 slivers each with a CVm of 2.8% are fed to a draw frame. If the draw frame adds a CVm of 1%, what will be the CVm of output sliver?

- A:-3.8%
- B:-1.1%
- C:-1.41%
- D:-1.8%

Correct Answer:- Option-C

Question69:-Low strength mechanical properties are strongly correlated with

- A:-Fabric thermal comfort
- B:-Fabric drape
- C:-Fabric dimensional stability
- D:-Fabric handle

Correct Answer:- Option-D

Question70:-Which one of the following parameters has no influence on air permeability?

- A:-Fabric cover factor
- B:-Yarn twist density
- C:-Fabric stiffness
- D:-Fabric porosity

Correct Answer:- Option-C

Question71:-What is the GSM (g/m²) of a square jammed plain cloth made from 20 tex cotton yarns of 0.17 mm diameter?

- A:-154
- B:-164
- C:-264
- D:-364

Correct Answer:- Option-B

Question72:-Which one of the following statements is false?

- A:-Equally strong but more extensible yarn will lead to higher grab strength.
- B:-The grab strength of a fabric is higher than its strip strength.
- C:-Tear resistance of a fabric is only a fraction of its tensile resistance.
- D:-The grab strength of a fabric reduces as the fabric width increases.

Correct Answer:- Option-D

Question73:-If same yarn is used for both warp and weft, maximum fabric thickness is

- A:-Three times of yarn diameter
- B:-Two times of yarn diameter
- C:-Four times of yarn diameter
- D:-Yarn diameter

Correct Answer:-**Question Cancelled**

Question74:-Thermal resistance values of fabrics in an assembly are

- A:-Multiplicative
- B:-Subtractive
- C:-Additive
- D:-Average

Correct Answer:- Option-C

Question75:-Shear stress vs. shear strain curve of a fabric shows

- A:-Linearity with hysteresis
- B:-Nonlinearity with hysteresis
- C:-Linearity without hysteresis
- D:-Nonlinearity with hysteresis

Correct Answer:- Option-B

Question76:-Self-twist spinning is most suitable for

- A:-Cotton
- B:-Jute

C:-Flax

D:-Wool

Correct Answer:- Option-D

Question77:-For same count, rotor yarn TM is

A:-2 times greater than that of ring yarn.

B:-10-15 % greater than ring yarn.

C:-Same as ring yarn.

D:-10-15% lower than ring yarn.

Correct Answer:- Option-B

Question78:-In case of Mélange yarn production, with the increase of shade depth

A:-Yarn quality deteriorates

B:-Yarn quality remains same

C:-Yarn quality improves

D:-Yarn quality firstly improves and then deteriorates

Correct Answer:- Option-A

Question79:-In case of air-vortex spinning

A:-All fibres start from the centre of the yarn and run outside.

B:-All fibres start from the surface of the yarn and run inside.

C:-Core fibres are parallel and the sheath fibres are wrapped over the core fibres

D:-Core fibres have a twist direction which is different from the sheath fibres

Correct Answer:- Option-A

Question80:-In comparison with the ring spun yarn, air-jet spun yarn is

A:-Weaker, stiffer and harder

B:-Stronger, softer and smoother

C:-Weaker, bulkier and harsher

D:-Stronger, hairier and evener

Correct Answer:- Option-A

Question81:-Feed per nip of comber is around

A:-2 mm

B:-6 mm

C:-12 mm

D:-18 mm

Correct Answer:- Option-B

Question82:-Self-cleaning action in a comber

A:-Increases with batt weight

B:-Decreases with batt weight

C:-Does not change with batt weight

D:-Decrease with fibre disorientation

Correct Answer:- Option-A

Question83:-Quality of combing is better in

A:-Forward feed

B:-Backward feed

C:-Mixed feed

D:-Differential feed

Correct Answer:- Option-B

Question84:-Which machine in the spinning line is termed as necessary evil for producing ring spun yarn?

A:-Card

B:-Comber

C:-Ring frame

D:-Speed frame

Correct Answer:- Option-D

Question85:-Pressure bar in draw frame is used to

A:-Apply pressure to the front top roller.

B:-Apply pressure to the middle top roller.

C:-Control the long fibre movement.

D:-Control the short fibre movement.

Correct Answer:- Option-D

Question86:-Yarn tension during winding is proportional to the

A:-` (Yarn tex)⁽²⁾`

B:- $\sqrt{\text{Yarn tex}}$

C:-Yarn tex

D:- $\frac{1}{\text{Yarn tex}}$

Correct Answer:- Option-C

Question87:-A 3.5 crossing drum means there are

A:-1.75 turns in a double traverse

B:-3.5 turns in a double traverse

C:-7 turns in a double traverse

D:-10.5 turns in a double traverse

Correct Answer:- Option-C

Question88:-A loom is weaving the design of 1 up 2 down twill. If the loom is running at 240 rpm, the speed of tappet shaft will be

A:-60 rpm

B:-120 rpm

C:-80 rpm

D:-240 rpm

Correct Answer:- Option-C

Question89:-A Jacquard design is repeating on 20 cm along length and 12 cm along width. If the fabric has 30 ends and 24 picks per cm, the Jacquard capacity is

A:-240

B:-580

C:-360

D:-480

Correct Answer:- Option-C

Question90:-A loom of 500 cm width is running at 800 picks/min. The weft insertion rate of the loom is

A:-800 m/min

B:-4000 m/min

C:-500 m/min

D:-5000 m/min

Correct Answer:- Option-B

Question91:-On a Sulzer® projectile loom, the number of projectiles depends on

A:-Projectile mass

B:-Torsion-bar arrangement

C:-Loom width

D:-Projectile length

Correct Answer:- Option-C

Question92:-Which one of the following phenomena cannot be described by Poisson distribution

A:-Number of warp breakage on a loom

B:-Number of fabric defects / square meter

C:-Number of fibres in the yarn cross-section

D:-Strength of the warp yarn

Correct Answer:- Option-D

Question93:-If 1 Km of yarn produces 900 m fabric, the yarn crimp in the fabric is

A:-10%

B:-9%

C:-11.1%

D:-10.9%

Correct Answer:- Option-C

Question94:-Indigo is a

A:-Vat dye

B:-Cationic dye

C:-Acid dye

D:-Disperse dye

Correct Answer:- Option-A

Question95:-Dyeing of acrylic is carried out by using

A:-Vat dye

B:-Cationic dye

C:-Acid dye

D:-Disperse dye

Correct Answer:- Option-B

Question96:-Acid dyes are held on fabric by means of

- A:-Covalent bond
- B:-Vander wall force
- C:-Electrostatic force
- D:-Electromagnetic force

Correct Answer:- Option-C

Question97:-Sublimation transfer printing is most suitable for

- A:-Cotton
- B:-Polyester
- C:-Silk
- D:-Acrylic

Correct Answer:- Option-B

Question98:-For printing with reactive dye, most suitable thickener is

- A:-Sodium chloride
- B:-Sodium hypochlorite
- C:-Sodium chlorite
- D:-Sodium alginate

Correct Answer:- Option-D

Question99:-Mercerization of a cotton fabric is carried out by

- A:-Sodium chloride
- B:-Sodium hypochlorite
- C:-Sodium hydroxide
- D:-Sodium chlorite

Correct Answer:- Option-C

Question100:-For a satin weave (warp face)

- A:-Picks/cm is greater than ends/cm.
- B:-Ends/cm is greater than picks/cm.
- C:-Ends/cm is equal to picks/cm.
- D:-Ends/cm is just less than picks/cm.

Correct Answer:- Option-B