

PROVISIONAL ANSWER KEY

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Question1:-The concept of Directive Principles of State Policy in Indian Constitution was borrowed from

- A:-Britain
- B:-Ireland
- C:-Canada
- D:-Russia

Correct Answer:- Option-B

Question2:-Which Articles of Indian Constitution was described as 'heart and soul of Indian Constitution'?

- A:-Article 28
- B:-Article 29
- C:-Article 30
- D:-Article 32

Correct Answer:- Option-D

Question3:-The Chief Legal Advisor to the Government of India is

- A:-Attorney General
- B:-Advocate General
- C:-Chief Justice of India
- D:-Comptroller and Auditor General of India

Correct Answer:- Option-A

Question4:-Who is popularly known as the 'Father of Indian Constitution'?

- A:-K.M. Munshi
- B:-Sardar Vallabhai Patel
- C:-Jawaharlal Nehru
- D:-Dr. B.R. Ambedkar

Correct Answer:- Option-D

Question5:-Which part of Indian Constitution has been described as the 'Magna Carta' of India?

- A:-Part III
- B:-Part IV
- C:-Part V
- D:-Part VI

Correct Answer:- Option-A

Question6:-Who wrote the book 'envisioning an empowered nation: technology for societal transformation'?

- A:-K.R. Narayanan
- B:-A.P.J. Abdul Kalam
- C:-R. Venkita Raman
- D:-V.V. Giri

Correct Answer:- Option-B

Question7:-The founding father of Modern Singapore

- A:-Goh Chok Tong
- B:-Lee Hsien Loong
- C:-Mao Zedong
- D:-Lee Kuan Yew

Correct Answer:- Option-D

Question8:-Which city will host the 2016 World Summer Olympics?

- A:-Rio de Janeiro
- B:-Tokyo
- C:-Beijing
- D:-London

Correct Answer:- Option-A

Question9:-The first Vice Chairman of newly constituted NITI Aayog was

- A:-Narendra Modi

B:-Arvind Panagariya

C:-Arun Jaitley

D:-Suresh Prabhu

Correct Answer:- Option-B

Question10:-The Good Will Ambassador of 35th National Games in India

A:-P.T. Usha

B:-Anju Bobby George

C:-Sachin Tendulkar

D:-Preeja Sreedharan

Correct Answer:- Option-C

Question11:-The famous Kallumala agitation for social freedom was organized under the leadership of

A:-Sree Narayana Guru

B:-Chattampi Swamikal

C:-Thycaud Ayya Vaikundar

D:-Ayyankali

Correct Answer:- Option-D

Question12:-The social reformer who organized 'misra-bhojanam' (interdining) for eradicating the evils of caste system was

A:-Sahodaran Ayyappan

B:-Brahmananda Sivayogi

C:-Vagbhadananda

D:-Kumaraguru

Correct Answer:- Option-A

Question13:-The 'Savarna Jatha' related to Vaikam Satyagraha was organized under the leadership of

A:-T.K. Madhavan

B:-Mannath Padmanabhan

C:-K. Kelappan

D:-C.V. Kunhiraman

Correct Answer:- Option-B

Question14:-Who founded 'Samatva Samajam' one of the earliest social organization of Kerala?

A:-Swamy Vagbhatananda

B:-Pokayil Yohannan

C:-Pandit K.P. Karuppan

D:-Vaikunta Swami

Correct Answer:- Option-D

Question15:-The ruler of Travancore who issued the famous Temple Entry Proclamation

A:-Swathi Thirunal Rama Varama

B:-Sree Chitra Thirunal Balarama Varama

C:-Sree Moolam Thirunal

D:-Visakhm Thirunal Rama Varama

Correct Answer:- Option-B

Question16:-The first annual session of S.N.D.P. Yogam held at

A:-Sivagiri

B:-Cherai

C:-Aruvipuram

D:-Paravur

Correct Answer:- Option-C

Question17:-The founder of Islam Dharma Paripalana Sangham was

A:-Vakkom Abdul Khadar Maulavi

B:-Vaikom Muhammad Basheer

C:-Rama Krishna Pillai

D:-Makthi Thangal

Correct Answer:- Option-A

Question18:-Who published 'Raja Samacharam' the first newspaper in Malayalam Language?

A:-Rev. Benjamin Bailey

B:-Fr. Muller

C:-Dr. Herman Gundert

D:-Rev. George Marthen

Correct Answer:- Option-C

Question19:-Who wrote the historical novel 'Rama Raja Bahadur'?

A:-A.R. Raja Raja Varma
B:-C.V. Raman Pillai
C:-K.M. Panikkar
D:-Oyyarathu Chandu Menon
Correct Answer:- Option-B

Question20:-Who hailed Akkamma Cheriyan as 'The Jhansi Rani of Travancore'?

A:-M.K. Gandhi
B:-B.G. Tilak
C:-Bipin Chandra Pal
D:-Jawaharlal Nehru
Correct Answer:- Option-A

Question21:-Which of the following is a trifunctional monomer?

A:-Propylene
B:-Butadiene
C:-Glycerol
D:-Glycol
Correct Answer:- Option-C

Question22:-Polymer molecular weight is equal to repeat unit molecular weight times n, where n is

A:-Degree of polymerization
B:-Functionality
C:-Molecular weight distribution
D:-Extent of polymerization
Correct Answer:- Option-A

Question23:-Below the glass transition temperature the free volume is

A:-Maximum
B:-Zero
C:-One
D:-Minimum
Correct Answer:- Option-D

Question24:-Which of the following is a first order process?

A:-Solidification
B:-Vapourization
C:-Melting
D:-All of these
Correct Answer:- Option-D

Question25:-Glass transition temperature of polyisoprene is

A:-Below room temperature
B:-Above room temperature
C:-Zero
D:-None of these
Correct Answer:- Option-A

Question26:-A SBR is an example of

A:-Graft copolymer
B:-Random copolymer
C:-Block copolymer
D:-Homopolymer
Correct Answer:- Option-B

Question27:-Hilderbrand is the unit of

A:-Flory interaction parameter
B:-Enthalpy
C:-Solubility parameter
D:-None of these
Correct Answer:- Option-C

Question28:-For a polymer prepared by free radical polymerization

A:- $M_w > M_n$
B:- $M_w < M_n$
C:- $M_z < M_n$
D:- $M_n = M_w = M_z$
Correct Answer:- Option-A

Question29:-Polydispersity index is said to be 1 when

- A:- $M_w = M_n$
- B:- $M_w > M_z$
- C:- $M_z > M_z+1$
- D:-None of these

Correct Answer:- Option-A

Question30:-In emulsion polymerization technique, the polymerization takes place in

- A:-Water phase
- B:-Monomer phase
- C:-Water/Monomer interphase
- D:-Micelle

Correct Answer:- Option-B

Question31:-Thermoplastic polyurethane is a

- A:-Thermoplastic
- B:-Elastomer
- C:-Thermoplastic elastomer
- D:-Thermoset

Correct Answer:- Option-C

Question32:-For EPDM the unsaturation is in the

- A:-Main chain
- B:-Branches
- C:-Pendent groups
- D:-All of these

Correct Answer:- Option-C

Question33:-The monomers of butyl rubber are

- A:-Butadiene and isoprene
- B:-Butadiene and 1-butene
- C:-Isoprene and 1-butene
- D:-None of these

Correct Answer:- Option-A

Question34:-The property that is lowered by increasing CN content of NBR is

- A:-Oil resistance
- B:-Low temperature flexibility
- C:-High temperature resistance
- D:-None of these

Correct Answer:- Option-B

Question35:-The EPM is not cured by

- A:-Sulphur
- B:-Peroxide
- C:-Radiation
- D:-Oxime

Correct Answer:- Option-A

Question36:-Fluorocarbons are known for

- A:-High temperature resistance
- B:-Ozone resistance
- C:-Oil resistance
- D:-All of these

Correct Answer:- Option-D

Question37:-Nylon 66 melts at (deg C)

- A:-219
- B:-249
- C:-269
- D:-289

Correct Answer:- Option-C

Question38:-In unsaturated polyester the monomer that is commonly used to give crosslinking sites is

- A:-Fumaric acid
- B:-Terephthalic acid
- C:-Itaconic acid
- D:-Maleic anhydride

Correct Answer:- Option-D

Question39:-Neoprene is commonly cured with

- A:-Sulphur
- B:-Metal oxide
- C:-Peroxide
- D:-Radiation

Correct Answer:- Option-B

Question40:-An example of amorphous polymer is

- A:-UPVC
- B:-PMMA
- C:-Polystyrene
- D:-All of these

Correct Answer:- Option-D

Question41:-For polymer containing OH group a major absorption peak is expected at (wave number)

- A:-3400
- B:-3000
- C:-2450
- D:-1700

Correct Answer:- Option-A

Question42:-Which of the following is commonly use to estimate crystallinity?

- A:-NMR
- B:-TGA
- C:-X ray
- D:-TMA

Correct Answer:- Option-C

Question43:-Tan delta is defined as

- A:-Loss modulus / storage modulus
- B:-Storage modulus / loss modulus
- C:-Logarithmic decay / phase angle
- D:-Phase angle / storage modulus

Correct Answer:- Option-A

Question44:-The angle of oscillation in MDR is (degrees)

- A:-2.0
- B:-0.2
- C:-3.0
- D:-360

Correct Answer:- Option-B

Question45:-Resilience is inversely related to

- A:-Compression set
- B:-Heat build up
- C:-Tension set
- D:-All of these

Correct Answer:- Option-D

Question46:-Tear strength is optimum at

- A:-Optimum cure
- B:-Slight under cure
- C:-Slight over cure
- D:-None of these

Correct Answer:- Option-B

Question47:-A high value of tan delta indicates

- A:-good traction
- B:-good mileage
- C:-low heat build up
- D:-All of these

Correct Answer:- Option-A

Question48:-Which rubber gives high tear resistance?

- A:-PBD
- B:-SBR
- C:-IIR

D:-NR

Correct Answer:- Option-D

Question49:-A DSC can measure

A:-Heat capacity

B:-Glass transition temperature

C:-Melting point

D:-All of these

Correct Answer:- Option-D

Question50:-Compression set at constant stress is measured using

A:-Constant load

B:-Constant strain

C:-Variable strain

D:-Variable temperature

Correct Answer:- Option-C

Question51:-A parison is used in

A:-Blow moulding

B:-Transfer moulding

C:-Compression moulding

D:-None of these

Correct Answer:- Option-A

Question52:-PET is not used in extrusion blow moulding because

A:-High viscosity

B:-High die swell

C:-Low melt strength

D:-Shark skin effect

Correct Answer:- Option-C

Question53:-Which of the following is amenable to reaction injection moulding?

A:-PET

B:-TPU

C:-NYLON

D:-PU

Correct Answer:- Option-D

Question54:-RRIM is used when

A:-Good strength is needed

B:-Fast reaction is needed

C:-High volume output is needed

D:-None of these

Correct Answer:- Option-A

Question55:-In a two roll mill the shear rate is adjusted by

A:-reducing nip gap

B:-increasing roll speed ratio

C:-both of these

D:-none of these

Correct Answer:- Option-C

Question56:-The effect of roll bending in calendaring operation is reduced by

A:-Roll crossing

B:-Roll crowning

C:-Roll bending

D:-All of these

Correct Answer:- Option-D

Question57:-The role of a plug in a plug-assisted thermoforming is to help

A:-Maintain uniform thickness

B:-Permit deep drawing

C:-Both of these

D:-None of these

Correct Answer:- Option-C

Question58:-In a Banbury the rotors can be

A:-Intermeshing

B:-Non-intermeshing

C:-Both of these

D:-None of these

Correct Answer:- Option-B

Question59:-Which of the following is not good for thermoforming?

A:-PP

B:-PE

C:-PF

D:-PS

Correct Answer:- Option-C

Question60:-Which of the following is the best for uniform filler dispersion?

A:-Two roll mill

B:-Banbury

C:-Intermix

D:-Kneader

Correct Answer:- Option-A

Question61:-Viscosity has the unit

A:-Pa. S

B:-N / sq. m

C:-Mpa

D:-dN.m.s

Correct Answer:- Option-A

Question62:-Decrease of viscosity with increasing shear rate is known as

A:-Newtonian behaviour

B:-Bingham plastics

C:-Dilatant behaviour

D:-Pseudoplastic behaviour

Correct Answer:- Option-D

Question63:-The unit of shear rate is

A:-meter per second

B:-Per second

C:-meter per second square

D:-Newton per second

Correct Answer:- Option-B

Question64:-Yield stress is shown by

A:-Pseudoplastic materials

B:-Dilatant materials

C:-Bingham plastics

D:-Newtonian liquids

Correct Answer:- Option-C

Question65:-Thixotropy is associated with reduction in viscosity

A:-With time at constant shear rate

B:-With shear rate

C:-With time and shear rate

D:-With shear stress

Correct Answer:- Option-A

Question66:-In rheology relaxation time is defined as

A:-Viscosity / modulus

B:-Modulus / yield stress

C:-Time for 50% reduction in viscosity

D:-Time for extrudate to recover

Correct Answer:- Option-A

Question67:-Bagley correction is done to account for

A:-Exit effect

B:-Slip at wall

C:-Stick-slip effect

D:-Entry effect

Correct Answer:- Option-D

Question68:-Apparent shear rate for a capillary flow is related to

A:-Volume flow rate and l/d ratio

B:-Volume flow rate and capillary diameter

C:-Shear stress and capillary diameter

D:-None of these

Correct Answer:- Option-B

Question69:-In an isometric creep curve

A:-Stress is plot against strain

B:-Strain is plotted against time

C:-Stress is plotted against log time

D:-Strain is plotted against log time

Correct Answer:- Option-C

Question70:-Which of the following involves the use of a rotor?

A:-MDR

B:-Mooney viscometer

C:-Rubber process analyzer

D:-All of these

Correct Answer:- Option-B

Question71:-The ply angle in radial tyres is close to _____ degrees.

A:-37

B:-45

C:-55

D:-90

Correct Answer:- Option-D

Question72:-Which of the following is a slow accelerator?

A:-DPG

B:-MBS

C:-MBTS

D:-MBT

Correct Answer:- Option-A

Question73:-Caprolactam disulphide is a

A:-Activator

B:-Monomer

C:-Sulphur donor

D:-Accelerator

Correct Answer:- Option-C

Question74:-Chemical mastication is operational after (deg. Centigrade)

A:-100

B:-120

C:-140

D:-150

Correct Answer:- Option-B

Question75:-Transmissibility is defined as

A:-Output amplitude / input amplitude

B:-Output frequency / input frequency

C:-Loss modulus / storage modulus

D:-None of these

Correct Answer:- Option-A

Question76:-For good vibration isolation

A:-Transmissibility must be > 1

B:-Natural frequency must be high

C:-Natural frequency must be low

D:-Damping must be high

Correct Answer:- Option-C

Question77:-DBP number is used to measure

A:-C black particle size

B:-C black surface area

C:-Surface functional group

D:-C black structure

Correct Answer:- Option-D

Question78:-BET method uses _____ gas to measure surface area.

A:-Oxygen

B:-Helium

C:-Nitrogen

D:-Argon

Correct Answer:- Option-C

Question79:-Si 69 is a

A:-Coupling agent

B:-Bonding agent

C:-Tackifier

D:-None of these

Correct Answer:- Option-A

Question80:-Azodicarbonamide is a

A:-Accelerator

B:-Blowing agent

C:-Peptizer

D:-Activator

Correct Answer:- Option-B

Question81:-The primary criterion for choosing blend components is

A:-Tg must be same

B:-Tg must be close

C:-Cohesive energy density > 1

D:-Solubility parameter must be close

Correct Answer:- Option-D

Question82:-Blend miscibility is studied using a

A:-DMA

B:-DSC

C:-Both of these

D:-None of these

Correct Answer:- Option-C

Question83:-Anisotropy is defined as

A:-Time dependent creep

B:-Strain dependent stress relaxation

C:-Temperature dependent modulus

D:-Direction dependent properties

Correct Answer:- Option-D

Question84:-In short fiber composite extrusion, fibers are oriented circumferentially in a

A:-Diverging die

B:-Converging die

C:-Capillary die

D:-Ribbon die

Correct Answer:- Option-A

Question85:-In blends UCST stands for

A:-Unit component surface thickness

B:-Upper critical solution temperature

C:-Unifiber composite sheet thickness

D:-None of these

Correct Answer:- Option-B

Question86:-Spherulites are related to

A:-Polymer composites

B:-Polymer blends

C:-Polymer crystals

D:-Polymer coatings

Correct Answer:- Option-C

Question87:-For a 70/30 NR/PE blend which phase morphology is more probable?

A:-NR is continuous phase

B:-PE is continuous phase

C:-They form IPN

D:-NR & PE form continuous phase

Correct Answer:- Option-A

Question88:-Which one has molecular level mixing?

- A:-Blend
- B:-Composite
- C:-Alloy
- D:-All of these

Correct Answer:- Option-C

Question89:-Which is a very commonly used fiber in tyre industry?

- A:-Nylon 6
- B:-Nylon 66
- C:-PET
- D:-Aramid

Correct Answer:- Option-B

Question90:-The membrane on rubber particles is

- A:-proteinic
- B:-lipoproteinic
- C:-phospholipoproteinic
- D:-phosphoproteinic

Correct Answer:- Option-C

Question91:-Which of the following statements is true?

- A:- $TSC > DRC$
- B:- $TSC < DRC$
- C:- $TSC = DRC$
- D:- $TSC-DRC < 1$

Correct Answer:- Option-A

Question92:-Mechanical stability test is done on

- A:-Latex
- B:-Unvulcanised rubber
- C:-Vulcanised rubber
- D:-Aged rubber

Correct Answer:- Option-A

Question93:-The major metal present in sludge removed from latex is

- A:-Fe
- B:-Mg
- C:-Mn
- D:-None of these

Correct Answer:- Option-B

Question94:-Which of the following is a VFA?

- A:-Stearic acid
- B:-Acetic acid
- C:-Palmitic acid
- D:-Oleic acid

Correct Answer:- Option-B

Question95:-Which of the following cannot destabilize latex?

- A:-Ammonia
- B:-Acid
- C:-Metal ion
- D:-Positively charged electrode

Correct Answer:- Option-A

Question96:-Potassium oleate is used in NR foam manufacture as

- A:-Foam stabilizer
- B:-Activator
- C:-Foam promoter
- D:-Antioxidant

Correct Answer:- Option-C

Question97:-The foaming agent used in NR foam is

- A:-DNPT
- B:-Nitrogen
- C:-Air
- D:-All of these

Correct Answer:- Option-C

Question98:-For making thick walled dipped products the preferred method is

A:-Coacervant dipping

B:-Heat sensitised dipping

C:-Straight dipping

D:-Multiple dipping

Correct Answer:- Option-B

Question99:-In electrodeposition the rubber is deposited on

A:-Positive electrode

B:-Semi permeable membrane

C:-Negative electrode

D:-All of these

Correct Answer:- Option-A

Question100:-Average size of rubber particles in latex is

A:-0.001 micron

B:-0.01 micron

C:-0.1 micron

D:-1 micron

Correct Answer:- Option-C