

- Q.1) All of the following are scalar quantities except
- Energy
  - Temperature
  - Time
  - Displacement
- Q.2) A system of three forces acts on a body and keeps it in equilibrium. The forces need to be
- Coplanar Only
  - Concurrent Only
  - Coplanar as well as Concurrent
  - Coplanar but may be or may not be Concurrent
- Q.3) A car travels from one station to another along a straight road. First half of the distance is covered with velocity of 60 Km/hr. and the second half is covered with velocity of 90 Km/hr. The average speed of the car is
- 72 km/hr
  - 75km/hr
  - 78 km/hr
  - None of the above
- Q.4) A Body is dropped from rest at height h. It covers a distance of  $\frac{9}{25}h$  in the last second. The height is about
- 100 m
  - 115 m
  - 125 m
  - 150 m
- Q.5) In simple harmonic motion , acceleration is proportional to
- displacement
  - linear velocity
  - angular velocity
  - rate of change of angular velocity
- Q.6) A particle covers equal distance around circular path in equal intervals of time. Which of the following parameters connected with the motion of particle remains constant with time?
- displacement
  - speed
  - velocity
  - acceleration
- Q.7) For a solid cone of height h, the CG lies on the axis at the distance above the base equal to
- $\frac{h}{4}$
  - $\frac{h}{3}$
  - $\frac{2h}{3}$
  - $\frac{3h}{8}$
- Q.8) Which of the following materials has a linear stress strain curve
- low carbon steel
  - copper
  - aluminium
  - rubber
- Q.9) Brinell number of a metal or an alloy is a measure of its
- tensile strength
  - toughness
  - malleability
  - hardness
- Q.10) If A and B are non singular matrices of same order , then  $(AB)^{-1}$  is equal to
- $A^{-1}B^{-1}$
  - $B^{-1}A^{-1}$
  - $AB^{-1}$
  - AB
- Q.11) A solution that can resist change in its pH on addition of alkali/acid is called
- Buffer solution
  - Neutral solution
  - Ideal solution
  - Zero pH solution
- Q.12) Which of the following has least hardness
- Diamond
  - Topaz
  - Quartz
  - Talc
- Q.13) Sea water as compared to distilled water will boil at
- Same temperature
  - Higher temperature
  - Lower temperature
  - Unpredictable
- Q.14) A real gas compared to ideal gas at very high pressure occupies
- Less volume
  - More volume
  - Same volume
  - More/less depending on gas
- Q.15) The weight of one cubic meter of air would be around
- 13 gm
  - 130 gm
  - 1300 gm
  - 13000 gm

- Q.16) Which of the following rays has the lowest wavelength
- a) radio waves
  - b) x-rays
  - c) infrared waves
  - d) ultraviolet waves
- Q.17) Transistor interjunction capacitance causes the following in the amplifier
- a) noise
  - b) harmonic distortion
  - c) phase shift
  - d) parasitic oscillation
- Q.18) Which of the following displays has minimum power consumption
- a) light emitting diode (LED)
  - b) liquid crystal display (LCD)
  - c) nixie tube
  - d) fluorescent
- Q.19) The induction of a coil can be increased by
- a) Decreasing number of turns
  - b) Increasing core length
  - c) Using core material of highly relative permeability
  - d) None of the above
- Q.20) Which of the following parameter will be more for 16 gauge copper wire in comparison to 14 gauge copper wire
- a) Cost
  - b) Strength
  - c) Resistance
  - d) Weight
- Q.21) A floating battery is one
- a) Which is getting charged
  - b) In which feeding loads
  - c) In which battery voltage is equal to charger voltage
  - d) Which gets charged and discharged simultaneously
- Q.22) If A.C. is fed by mistake to a DC motor then DC motor will
- a) Burn as the eddy current in the field produce heat
  - b) Run at its normal speed
  - c) Run at a lower speed
  - d) Run continuously but the sparking takes place at the brushes
- Q.23) The function of commutator in a DC machine is
- a) To improve commutation
  - b) To improve efficiency of motor
  - c) To change alternative voltage to direct voltage
  - d) To change direct voltage to alternative voltage
- Q.24) The starting torque of slip ring induction motor is increased by
- a) Adding external resistance to the rotor
  - b) Adding external induction to the rotor
  - c) Increasing the voltage fed to the motor
  - d) Adding external capacitance to the rotor
- Q.25) Full load current of a 10 HP, 3 phase, 440V induction motor is of order of
- a) 7 A
  - b) 14 A
  - c) 21 A
  - d) 28 A
- Q.26) Which parameter is increased by a step up transformer
- a) Current
  - b) Resistance
  - c) Voltage
  - d) Power
- Q.27) The internal impedance of an accurate voltmeter should be
- a) As low as possible
  - b) Low
  - c) Negligible
  - d) Very high
- Q.28) Friction losses are more in the following type of instruments
- a) Dynamometer type
  - b) Moving coil type
  - c) Moving iron type
  - d) Moving magnet type

- Q.29) The system of linear equations  
 $(4d-1)x + y + z = 0$   
 $-y + z = 0$   
 $(4d-1) = 0$   
 Has a non trivial sol. , if d is equal  
 a)  $1/2$  b)  $1/4$   
 c)  $3/4$  d)  $1$
- Q.30) Area bound by parabola  $y = 2x^2$  and the line  $y = x-4$  is equal to  
 a) 6 b) 18  
 c) Infinity d) None of these
- Q.31) The probability of getting a number between 1 and 100 which is divisible by 1 itself only is  
 a)  $27/185$  b)  $23/97$   
 c)  $25/98$  d) None of these
- Q.32) What would be the expectation of the number of failures preceding the first success in an infinite series of independent trials with constant probability of success p ?  
 a)  $1/p$  b)  $1/q$   
 c)  $q/p$  d) none of these
- Q.33) The flow of water in the pipe of diameter 3000 mm can be measured by  
 a) Venturimeter b) Rotameter  
 c) Pilot tube d) Orifice plate
- Q.34) In laminar flow , maximum velocity at the centre of the pipe is how many times to the average velocity?  
 a) 2 b) 3  
 c) 4 d) None of these
- Q.35) A system comprising of a single phase , is known as  
 a) Open system b) Closed system  
 c) Homogenous system d) Heterogeneous system
- Q.36) With rise in temperature , the specific heat of water  
 a) increases b) decreases  
 c) first decreases to minimum and then increases d) remains constant
- Q.37) The sequence of the process that eventually returns the working substance to its original state , is known as  
 a) Event b) Thermodynamic cycle  
 c) Thermodynamic property d) None of these
- Q.38) The absolute zero can be obtained at a temperature of  
 a) 0 degree Celsius b) 273 degree Celsius  
 c) + 273 Kelvin d) None of the above
- Q.39) Specific heat of gas  $C_p = C_v$  , at  
 a) Absolute zero b) Critical temperature  
 c) Triple point d) All temperatures
- Q.40) When D is the diameter of the molecules of a gas in a confined space, the collision frequency will be proportional to  
 a) D b)  $1/D$   
 c)  $D^2$  d)  $1/D^2$
- Q.41) A dog weighing 2 kgs jump from the floor to window 1.5 mtr high . Neglecting the air drag , work done by dog is  
 a) Zero b) Nearly 30 Nm  
 c) 3 Nm d) None of the above

- Q.42) For a reversible adiabatic compression in a steady flow process, the work done per unit mass is integration of
- a)  $P dV$
  - b)  $V dp$
  - c)  $T dS$
  - d)  $S dT$
- Q.43) In a strained material one of the principal stress equals twice the others. If the maximum shear stress is  $\tau_{\max}$ , then the value of maximum principal stress is
- a)  $\tau_{\max}$
  - b)  $2 \tau_{\max}$
  - c)  $4 \tau_{\max}$
  - d)  $8 \tau_{\max}$
- Q.44) For general stress calculation, a cylinder is considered as thin if,
- a)  $t/d \leq 0.075$
  - b)  $t/d \leq 0.05$
  - c)  $t/d \leq 0.02$
  - d)  $t/d \leq 0.01$
- Q.45) For measuring flow by venturimeter it should be installed in
- a) Vertical line
  - b) Horizontal line
  - c) Inclined line with upward flow
  - d) In any direction and in any location
- Q.46) For an irrotational flow the equation  $\nabla^2 \Phi = 0$  is known as
- a) Bernoulli's equation
  - b) Cauchy Riemann's equation
  - c) Euler's Equation
  - d) Laplace Equation
- Q.47) To replace a compound pipe by a new pipe, the pipes will be equivalent when both pipes have same
- a) Length and flow
  - b) Diameter and flow
  - c) Loss of head and flow
  - d) Length and loss of head
- Q.48) Unsteady uniform flow is flow through a / an
- a) Expanding tube at an increasing rate
  - b) Expanding tube at constant rate
  - c) Long pipe at decreasing rate
  - d) Long pipe at constant rate
- Q.49) A piezometer cannot be used for pressure measurement in pipes when
- a) Pressure difference is low
  - b) Velocity is high
  - c) Fluid in the pipe is gas
  - d) Fluid is Highly viscous
- Q.50) If  $V$  is the mean velocity of the flow, then according to Darcy Weisbach equation for pipe flow, energy loss over a length of pipe is proportional to
- a)  $V$
  - b)  $1/V$
  - c)  $V^2$
  - d)  $\sqrt{V}$
- Q.51) If pressure at any point in the liquid approaches the vapour pressure, liquid starts vaporising and creates pockets or bubbles of dissolved gases and vapours. This phenomenon is
- a) Surface tension
  - b) Adhesion
  - c) Vaporisation
  - d) Cavitation
- Q.52) Energy loss in flow through nozzle as compared to venturimeter is
- a) Same
  - b) More
  - c) Less
  - d) Unpredictable
- Q.53) Rain drops are spherical because of
- a) viscosity
  - b) air resistance
  - c) surface tension
  - d) atmospheric pressure
- Q.54) The two important forces for a floating body are
- a) buoyancy, gravitation
  - b) buoyancy, pressure
  - c) buoyancy, inertial
  - d) inertial, gravity
- Q.55) A hydrometer is used to determine
- a) Relative humidity
  - b) Buoyant force
  - c) Specific gravity of fluids
  - d) A fixed region in space

- Q.56) 1 Micron is equal to
- a)  $10^{-4}$  meters
  - b)  $10^{-6}$  meters
  - c)  $10^{-9}$  meters
  - d)  $10^{-12}$  meters
- Q.57) Emissive power of a body depends upon
- a) Wavelength
  - b) Temperature
  - c) Physical nature
  - d) All of these
- Q.58) Absorptivity and reflectivity of transparent body are
- a) 0 and 0
  - b) 1 and 0
  - c) 0 and 1
  - d) 1 and 1
- Q.59) The heat transfer takes place according to
- a) Zeroth law of thermodynamics
  - b) First Law of thermodynamics
  - c) Second Law of Thermodynamics
  - d) Kirchoff's law
- Q.60) Which of the following forces do not act in case of fluids?
- a) centrifugal force
  - b) tensile force
  - c) vibratory force
  - d) elastic force
- Q.61) The passage of current in an electrolyte is due to the movement of
- a) Electrons
  - b) Particles
  - c) Molecules
  - d) Ions
- Q.62) Which of the following phosphorous is used as poison
- a) Black
  - b) Red
  - c) White
  - d) Violet
- Q.63) Crystal structure of a material can be examined by
- a) Microscope
  - b) Optical microscope
  - c) Electron microscope
  - d) X-ray and electron diffraction
- Q.64) One cubic centimetre of metal would contain the number of atoms of the following order
- a)  $10^5$
  - b)  $10^{12}$
  - c)  $10^{18}$
  - d)  $10^{22}$
- Q.65) The specific heat of an ideal gas depends on its
- a) temperature
  - b) pressure
  - c) molecular weight and structure
  - d) volume
- Q.66) The impedance at frequencies above resonance frequency is
- a) Purely inductive
  - b) Purely capacitive
  - c) Purely resistive
  - d) Complex
- Q.67) The cells are connected in series to
- a) Increase the current output
  - b) Decrease the internal resistance
  - c) Increase the voltage output
  - d) Increase the power rating
- Q.68) The ease with which observation can be made accurately is referred to as
- a) Readability
  - b) Sensitivity
  - c) Accuracy
  - d) Precision
- Q.69) Element of the indicating device carrying the scale is called
- a) Dial
  - b) Housing
  - c) Transducer
  - d) Index
- Q.70) The surface roughness on a drawing is represented by
- a) Circles
  - b) Triangles
  - c) Zig zag lines
  - d) Square
- Q.71) We\_\_\_\_dinner now. Can you phone later, please?
- a) having
  - b) are having
  - c) have
  - d) are have

- Q.72) Sachin is a vegetarian. He \_\_\_\_\_ meat.  
 a) eat b) not eat  
 c) isn't eating d) doesn't eat
- Q.73) What do you usually do at weekends ? I usually \_\_\_\_\_ a bike.  
 a) riding b) ride  
 c) and riding d) rides
- Q.74) They \_\_\_\_\_ milk. Really ?  
 a) not liking b) are not liking  
 c) likes d) don't like
- Q.75) Where are the children ? They \_\_\_\_\_ in the garden.  
 a) are playing b) play  
 c) playing d) plays
- Q.76) Listen! Can you hear it ? Yes somebody \_\_\_\_\_  
 a) singing b) is singing  
 c) are singing d) sing
- Q.77) Do I need an umbrella? No, it \_\_\_\_\_  
 a) is rain b) rains  
 c) isn't raining d) is raining
- Q.78) I \_\_\_\_\_ my job. Why? It's very boring.  
 a) don't like b) likes  
 c) like d) doesn't like
- Q.79) Where \_\_\_\_\_ live ? They live in Ahmedabad.  
 a) do they b) do we  
 c) they d) do
- Q.80) Coffee ? No, thanks. I never \_\_\_\_\_ coffee.  
 a) don't drink b) drink  
 c) drinks d) not drink
- Q.81) સાચી જોડણી લખો. “અતિશયોકતી”  
 a) અતીશ્યોકતિ b) અતિશયોકતિ  
 c) અતીશ્યોકતી d) અતિશયોકિત
- Q.82) કલાપીનું મૂળ નામ જણાવો  
 a) સૂરમિતસિંહ તખ્તસિંગ ગોહિલ b) સૂરજિતસિંગ તખ્તસિંહજી ગોહિલ  
 c) સૂરસિંહજી તખ્તસિંહજી ગોહિલ d) સૂરસિંહજી તખ્તજી ગોહિલ
- Q.83) નરસિંહ મહેતાના પદો કયા નામે ઓળખાય છે ?  
 a) અજવાળિયાં b) પ્રભાતિયાં  
 c) સૂર્યોદય d) અંધારિયાં
- Q.84) મનુભાઈ પંચોળીનું ઉપનામ જણાવો.  
 a) દર્શક b) પ્રકાશક  
 c) આકર્ષક d) પ્રત્યક્ષ
- Q.85) સંધિ છોડો – ચિરાયુ  
 a) ચીર + આયુ b) ચિર + આયુ  
 c) ચિર + આયુ d) ચિરા + આયુ
- Q.86) સંધિ છોડો – ઉત્તરોત્તર  
 a) ઉત્તર + ઉત્તર b) ઉત્તર + ઉત્તર  
 c) ઉત્તરો + ઉત્તર d) ઉત્તર + ઉત્તર

- Q.87) રૂઢિપ્રયોગનો અર્થ સમજાવો - રૂવાડુંય ન ફરકવું  
 a) ખબર ન પડવી  
 b) સહેજે ખ્યાલ ન આવવો  
 c) સહેજ પણ અસર ન થવી  
 d) સહેજમાં ખબર પડી જવી.
- Q.88) અર્થ સમજાવો - ચિર  
 a) વિશાળ  
 b) મોટું  
 c) લાંબુ  
 d) પૂજાળ
- Q.89) ભાવવાચક નામ બનાવો - ઉચિત  
 a) ચોક્કસ  
 b) ઔચિત્ય  
 c) યોગ્ય  
 d) લગભગ
- Q.90) શબ્દ સમૂહ માટે એક શબ્દ આપો - 'જેને કોઈ શત્રુ નથી તે'  
 a) એકલવીર  
 b) શત્રુ વિનાનો  
 c) મિત્રતા  
 d) અજાતશત્રુ
- Q.91) ભારતનાં સૌ પ્રથમ મહિલા પ્રેસ ફોટોગ્રાફર કોણ છે. ?  
 a) હેમા પ્યારેલાલ  
 b) હીમાય વ્યારાવાલા  
 c) હેમાલી વ્યારાવાલા  
 d) હીમાય પ્યારેલાલ
- Q.92) ભારતની સૌ પ્રથમ ઓપન યુનિવર્સિટી કઈ છે. ?  
 a) ઈન્ડિરા ગાંધી ઓપન યુનિ.  
 b) જવાહરલાલ નહેરુ ઓપન યુનિ.  
 c) અટલ બિહારી બાજપાઈ ઓપન યુનિ.  
 d) ડૉ. બી. આર. આંબેડકર ઓપન યુનિ.
- Q.93) ભારતીય બંધારણની કઈ કલમ જમ્મુ-કાશ્મીરને ખાસ દરજ્જો આપે છે. ?  
 a) ૪૭૦  
 b) ૩૭૧  
 c) ૩૭૦  
 d) ૩૭૯
- Q.94) નર્વસ નાઈન્ટી શબ્દ કઈ રમત સાથે જોડાયેલો છે ?  
 a) કબ્બડી  
 b) વોલીબોલ  
 c) ફૂટબોલ  
 d) ક્રિકેટ
- Q.95) ભારતનો ભાખરાનાંગલ બંધ કઈ નદી પર આવેલો છે.  
 a) બિયાસ  
 b) સિંધુ  
 c) ગંગા  
 d) સત્તલજ
- Q.96) ફરિકોટા શા માટે જાણીતું છે?  
 a) અણમથક  
 b) ઈન્ફોસીટી  
 c) સેટેલાઈટ લોન્ચીંગ સ્ટેશન  
 d) પાવર પ્રોજેક્ટ
- Q.97) ગુજરાતના બ્રાન્ડ એમ્બેસેડર તરીકે કોણ કામ કરી રહ્યુ છે.  
 a) અજય દેવગણ  
 b) અમિતાભ બચ્ચન  
 c) આમિરખાન  
 d) અક્ષયકુમાર
- Q.98) ભારતમાં સતી પ્રથા બંધ કરાવનાર સમાજસુધારક કોણ હતા ?  
 a) ડૉ. આંબેડકર  
 b) રાજા રામમોહનરાય  
 c) રાણી લક્ષ્મીબાઈ  
 d) કસ્તૂરબા ગાંધી
- Q.99) કયા દેશને પ્રાચીન સમયમાં ગાંધાર તરીકે ઓળખવામાં આવતો હતો.  
 a) પાકિસ્તાન  
 b) અફઘાનિસ્તાન  
 c) તૂર્કીસ્તાન  
 d) બલૂચિસ્તાન
- Q.100) સમ્રાટ અકબરે બુલંદ દરવાજા તેના કયા રાજ્યના વિજયની સ્મૃતિમાં બંધાવેલા છે ?  
 a) મહારાષ્ટ્ર  
 b) ગુજરાત  
 c) મધ્યપ્રદેશ  
 d) દિલ્હી

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c) Molecules  
d) Ions
- Q.11) Absorptivity and reflectivity of transparent body are
- a) 0 and 0  
b) 1 and 0  
c) 0 and 1  
d) 1 and 1
- Q.12) Which of the following phosphorous is used as poison
- a) Black  
b) Red  
c) White  
d) Violet
- Q.13) Emissive power of a body depends upon
- a) Wavelength  
b) Temperature  
c) Physical nature  
d) All of these
- Q.14) The two important forces for a floating body are
- a) buoyancy, gravitation  
b) buoyancy, pressure  
c) buoyancy, inertial  
d) inertial, gravity
- Q.15) Rain drops are spherical because of
- a) viscosity  
b) air resistance  
c) surface tension  
d) atmospheric pressure
- Q.16) A hydrometer is used to determine
- a) Relative humidity  
b) Buoyant force  
c) Specific gravity of fluids  
d) A fixed region in space
- Q.17) Energy loss in flow through nozzle as compared to venturimeter is
- a) Same  
b) More  
c) Less  
d) Unpredictable



- Q.18) 1 Micron is equal to  
 a)  $10^{-4}$  meters  
 b)  $10^{-6}$  meters  
 c)  $10^{-9}$  meters  
 d)  $10^{-12}$  meters
- Q.19) If pressure at any point in the liquid approaches the vapour pressure, liquid starts vaporising and creates pockets or bubbles of dissolved gases and vapours. This phenomenon is  
 a) Surface tension  
 b) Adhesion  
 c) Vaporisation  
 d) Cavitation
- Q.20) The impedance at frequencies above resonance frequency is  
 a) Purely inductive  
 b) Purely capacitive  
 c) Purely resistive  
 d) Complex
- Q.21) The specific heat of an ideal gas depends on its  
 a) temperature  
 b) pressure  
 c) molecular weight and structure  
 d) volume
- Q.22) The cells are connected in series to  
 a) Increase the current output  
 b) Decrease the internal resistance  
 c) Increase the voltage output  
 d) Increase the power rating
- Q.23) One cubic centimetre of metal would contain the number of atoms of the following order  
 a)  $10^5$   
 b)  $10^{12}$   
 c)  $10^{18}$   
 d)  $10^{22}$
- Q.24) The ease with which observation can be made accurately is referred to as  
 a) Readability  
 b) Sensitivity  
 c) Accuracy  
 d) Precision
- Q.25) Crystal structure of a material can be examined by  
 a) Microscope  
 b) Optical microscope  
 c) Electron microscope  
 d) X-ray and electron diffraction
- Q.26) ગુજરાતના બ્રાન્ડ એમ્બેસેડર તરીકે કોણ કામ કરી રહ્યુ છે.  
 a) અજય દેવગણ  
 b) અમિતાભ બચ્ચન  
 c) આમિરખાન  
 d) અક્ષયકુમાર
- Q.27) હરિકોટા શા માટે જાણીતું છે?  
 a) અણમથક  
 b) ઈન્ફોસીટી  
 c) સેટેલાઈટ લોચીંગ સ્ટેશન  
 d) પાવર પ્રોજેક્ટ
- Q.28) ભારતમાં સતી પ્રથા બંધ કરાવનાર સમાજસુધારક કોણ હતા?  
 a) ડૉ. આંબેડકર  
 b) રાજા રામમોહનરાય  
 c) રાણી લક્ષ્મીબાઈ  
 d) કસ્તૂરબા ગાંધી
- Q.29) ભારતનો ભાષાનાંગલ બંધ કઈ નદી પર આવેલો છે.  
 a) બિયાસ  
 b) સિંધુ  
 c) ગંગા  
 d) સત્તલજ
- Q.30) કયા દેશને પ્રાચીન સમયમાં ગાંધાર તરીકે ઓળખવામાં આવતો હતો.  
 a) પાકિસ્તાન  
 b) અફઘાનિસ્તાન  
 c) તુર્કિસ્તાન  
 d) બલૂચિસ્તાન
- Q.31) નર્વસ નાઈન્ટી શબ્દ કઈ રમત સાથે જોડાયેલો છે ?  
 a) કબ્બડી  
 b) વોલીબોલ  
 c) ફૂટબોલ  
 d) ક્રિકેટ
- Q.32) સમ્રાટ અકબરે બુલંદ દરવાજા તેના કયા રાજ્યના વિજયની સ્મૃતિમાં બંધાવેલા છે ?  
 a) મહારાષ્ટ્ર  
 b) ગુજરાત  
 c) મધ્યપ્રદેશ  
 d) દિલ્હી

- Q.33) સંધિ છોડો - ચિરાયુ  
 a) ચીર + આયુ  
 b) ચિર + આયુ  
 c) ચિર + આયુ  
 d) ચિરા + આયુ
- Q.34) મનુભાઈ પંચોળીનું ઉપનામ જણાવો.  
 a) દર્શક  
 b) પ્રકાશક  
 c) આકર્ષક  
 d) પ્રત્યક્ષ
- Q.35) સંધિ છોડો - ઉત્તરોત્તર  
 a) ઉત્તર + ઉત્તર  
 b) ઉત્તર + ઉત્તર  
 c) ઉત્તરો + ઉત્તર  
 d) ઉત્તર + ઉત્તર
- Q.36) નરસિંહ મહેતાના પદો કયા નામે ઓળખાય છે ?  
 a) અજવાળિયાં  
 b) પ્રભાતિયાં  
 c) સૂર્યોદય  
 d) અંધારિયાં
- Q.37) રૂઢિપ્રયોગનો અર્થ સમજાવો - રૂવાડુંય ન ફરકવું  
 a) ખબર ન પડવી  
 b) સહેજે ખ્યાલ ન આવવો  
 c) સહેજ પણ અસર ન થવી  
 d) સહેજમાં ખબર પડી જવી.
- Q.38) કલાપીનું મૂળ નામ જણાવો.  
 a) સૂરમિતસિંહ તખ્તસિંહ ગોહિલ  
 b) સૂરજિતસિંહ તખ્તસિંહ ગોહિલ  
 c) સૂરસિંહજી તખ્તસિંહજી ગોહિલ  
 d) સૂરસિંહજી તખ્તજી ગોહિલ
- Q.39) Where \_\_\_\_\_ live ? They live in Ahmedabad.  
 a) do they  
 b) do we  
 c) they  
 d) do
- Q.40) I \_\_\_\_\_ my job. Why? It's very boring.  
 a) don't like  
 b) likes  
 c) like  
 d) doesn't like
- Q.41) Coffee ? No, thanks. I never \_\_\_\_\_ coffee.  
 a) don't drink  
 b) drink  
 c) drinks  
 d) not drink
- Q.42) Do I need an umbrella? No, it \_\_\_\_\_  
 a) is rain  
 b) rains  
 c) isn't raining  
 d) is raining
- Q.43) સાચી જોડણી લખો. "અતિશયોકતી"  
 a) અતીશ્યોકતિ  
 b) અતિશ્યોકતિ  
 c) અતીશ્યોકતી  
 d) અતિશ્યોકિત
- Q.44) Listen! Can you hear it ? Yes somebody \_\_\_\_\_  
 a) singing  
 b) is singing  
 c) are singing  
 d) sing
- Q.45) ભારતનાં સૌ પ્રથમ મહિલા પ્રેસ ફોટોગ્રાફર કોણ છે. ?  
 a) હેમા ખ્યારેલાલ  
 b) હોમાય વ્યારાવાલા  
 c) હેમાલી વ્યારાવાલા  
 d) હીમાય ખ્યારેલાલ
- Q.46) શબ્દ સમૂહ માટે એક શબ્દ આપો - 'જેને કોઈ શત્રુ નથી તે'  
 a) એકલવીર  
 b) શત્રુ વિનાનો  
 c) મિત્રતા  
 d) અજાતશત્રુ
- Q.47) ભારતની સૌ પ્રથમ ઓપન યુનિવર્સિટી કઈ છે. ?  
 a) ઈન્દિરા ગાંધી ઓપન યુનિ.  
 b) જવાહરલાલ નહેરુ ઓપન યુનિ.  
 c) અટલ બિહારી વાજપાઈ ઓપન યુનિ.  
 d) ડૉ. બી. આર. આંબેડકર ઓપન યુનિ.

- Q.48) ભાવવાચક નામ બનાવો - ઉચિત  
 a) ચોક્કસ b) ઔચિત્ય  
 c) યોગ્ય d) લગભગ
- Q.49) ભારતીય બંધારણની કઈ કલમ જમ્મુ-કાશ્મીરને ખાસ દરજ્જો આપે છે. ?  
 a) ૪૭૦ b) ૩૭૧  
 c) ૩૭૦ d) ૩૭૯
- Q.50) અર્થ સમજાવો - ચિર  
 a) વિશાળ b) મોટું  
 c) લાંબુ d) પૂજ્ઞ
- Q.51) If A.C. is fed by mistake to a DC motor then DC motor will  
 a) Burn as the eddy current in the field produce heat b) Run at its normal speed  
 c) Run at a lower speed d) Run continuously but the sparking takes place at the brushes
- Q.52) A floating battery is one  
 a) Which is getting charged b) In which feeding loads  
 c) In which battery voltage is equal to charger voltage d) Which gets charged and discharged simultaneously
- Q.53) The function of commutator in a DC machine is  
 a) To improve commutation b) To improve efficiency of motor  
 c) To change alternative voltage to direct voltage d) To change direct voltage to alternative voltage
- Q.54) Which of the following parameter will be more for 16 gauge copper wire in comparison to 14 gauge copper wire  
 a) Cost b) Strength  
 c) Resistance d) Weight
- Q.55) The starting torque of slip ring induction motor is increased by  
 a) Adding external resistance to the rotor b) Adding external induction to the rotor  
 c) Increasing the voltage fed to the motor d) Adding external capacitance to the rotor
- Q.56) The induction of a coil can be increased by  
 a) Decreasing number of turns b) Increasing core length  
 c) Using core material of highly relative permeability d) None of the above
- Q.57) Full load current of a 10 HP, 3 phase, 440V induction motor is of order of  
 a) 7 A b) 14 A  
 c) 21 A d) 28 A
- Q.58) If A and B are non singular matrices of same order, then  $(AB)^{-1}$  is equal to  
 a)  $A^{-1}B^{-1}$  b)  $B^{-1}A^{-1}$   
 c)  $AB^{-1}$  d) AB
- Q.59) Brinell number of a metal or an alloy is a measure of its  
 a) tensile strength b) toughness  
 c) malleability d) hardness
- Q.60) A solution that can resist change in its pH on addition of alkali/acid is called  
 a) Buffer solution b) Neutral solution  
 c) Ideal solution d) Zero pH solution
- Q.61) Which of the following materials has a linear stress strain curve  
 a) low carbon steel b) copper  
 c) aluminium d) rubber

- Q.62) Which of the following has least hardness
- a) Diamond  
b) Topaz  
c) Quartz  
d) Talc
- Q.63) For a solid cone of height  $h$ , the CG lies on the axis at the distance above the base equal to
- a)  $h/4$   
b)  $h/3$   
c)  $2h/3$   
d)  $3h/8$
- Q.64) A Body is dropped from rest at height  $h$ . It covers a distance of  $9/25 h$  in the last second. The height is about
- a) 100 m  
b) 115 m  
c) 125 m  
d) 150 m
- Q.65) A car travels from one station to another along a straight road. First half of the distance is covered with velocity of 60 Km/hr. and the second half is covered with velocity of 90 Km/hr. The average speed of the car is
- a) 72 km/hr  
b) 75km/hr  
c) 78 km/hr  
d) None of the above
- Q.66) In simple harmonic motion , acceleration is proportional to
- a) displacement  
b) linear velocity  
c) angular velocity  
d) rate of change of angular velocity
- Q.67) A system of three forces acts on a body and keeps it in equilibrium. The forces need to be
- a) Coplanar Only  
b) Concurrent Only  
c) Coplanar as well as Concurrent  
d) Coplanar but may be or may not be Concurrent
- Q.68) A particle covers equal distance around circular path in equal intervals of time. Which of the following parameters connected with the motion of particle remains constant with time?
- a) displacement  
b) speed  
c) velocity  
d) acceleration
- Q.69) All of the following are scalar quantities except
- a) Energy  
b) Temperature  
c) Time  
d) Displacement
- Q.70) Which of the following rays has the lowest wavelength
- a) radio waves  
b) x-rays  
c) infrared waves  
d) ultraviolet waves
- Q.71) The weight of one cubic meter of air would be around
- a) 13 gm  
b) 130 gm  
c) 1300 gm  
d) 13000 gm
- Q.72) Transistor interjunction capacitance causes the following in the amplifier
- a) noise  
b) harmonic distortion  
c) phase shift  
d) parasitic oscillation
- Q.73) A real gas compared to ideal gas at very high pressure occupies
- a) Less volume  
b) More volume  
c) Same volume  
d) More/less depending on gas
- Q.74) Which of the following displays has minimum power consumption
- a) light emitting diode (LED)  
b) liquid crystal display (LCD)  
c) nixie tube  
d) fluorescent
- Q.75) Sea water as compared to distilled water will boil at
- a) Same temperature  
b) Higher temperature  
c) Lower temperature  
d) Unpredictable
- Q.76) To replace a compound pipe by a new pipe , the pipes will be equivalent when both pipes have same
- a) Length and flow  
b) Diameter and flow  
c) Loss of head and flow  
d) Length and loss of head
- Q.77) For an irrotational flow the equation  $\partial^2 \Phi / \partial x^2 + \partial^2 \Phi / \partial y^2$  is known as
- a) Bernoulli's equation  
b) Cauchy Riemann's equation  
c) Euler's Equation  
d) Laplace Equation

- Q.78) Unsteady uniform flow is flow through a / an
- Expanding tube at an increasing rate
  - Expanding tube at constant rate
  - Long pipe at decreasing rate
  - Long pipe at constant rate
- Q.79) For measuring flow by venturimeter it should be installed in
- Vertical line
  - Horizontal line
  - Inclined line with upward flow
  - In any direction and in any location
- Q.80) A piezometer cannot be used for pressure measurement in pipes when
- Pressure difference is low
  - Velocity is high
  - Fluid in the pipe is gas
  - Fluid is Highly viscous
- Q.81) For general stress calculation , a cylinder is considered as thin if,
- $t/d \ll 0.075$
  - $t/d \ll 0.05$
  - $t/d \ll 0.02$
  - $t/d \ll 0.01$
- Q.82) If  $V$  is the mean velocity of the flow , then according to Darcy Weisbach equation for pipe flow, energy loss over a length of pipe is proportional to
- $V$
  - $1/V$
  - $V^2$
  - $\sqrt{V}$
- Q.83) A system comprising of a single phase , is known as
- Open system
  - Closed system
  - Homogenous system
  - Heterogeneous system
- Q.84) In laminar flow , maximum velocity at the centre of the pipe is how many times to the average velocity?
- 2
  - 3
  - 4
  - None of these
- Q.85) With rise in temperature , the specific heat of water
- increases
  - decreases
  - first decreases to minimum and then increases
  - remains constant
- Q.86) The flow of water in the pipe of diameter 3000 mm can be measured by
- Venturimeter
  - Rotameter
  - Pilot tube
  - Orifice plate
- Q.87) The sequence of the process that eventually returns the working substance to its original state ,is known as
- Event
  - Thermodynamic cycle
  - Thermodynamic property
  - None of these
- Q.88) What would be the expectation of the number of failures preceding the first success in an infinite series of independent trials with constant probability of success  $p$  ?
- $1/p$
  - $1/q$
  - $q/p$
  - none of these
- Q.89) The system of linear equations
- $$(4d-1)x + y + z = 0$$
- $$-y + z = 0$$
- $$(4d-1) = 0$$
- Has a non trivial sol. , if  $d$  is equal
- $1/2$
  - $1/4$
  - $3/4$
  - 1
- Q.90) Friction losses are more in the following type of instruments
- Dynamometer type
  - Moving coil type
  - Moving iron type
  - Moving magnet type
- Q.91) Area bound by parabola  $y = 2x^2$  and the line  $y = x-4$  is equal to
- 6
  - 18
  - Infinity
  - None of these
- Q.92) The internal impedance of an accurate voltmeter should be
- As low as possible
  - Low
  - Negligible
  - Very high
- Q.93) The probability of getting a number between 1 and 100 which is divisible by 1 itself only is
- $27/185$
  - $23/97$
  - $25/98$
  - None of these

- Q.94) Which parameter is increased by a step up transformer
- a) Current
  - b) Resistance
  - c) Voltage
  - d) Power
- Q.95) A dog weighing 2 kgs jump from the floor to window 1.5 mtr high . Neglecting the air drag , work done by dog is
- a) Zero
  - b) Nearly 30 Nm
  - c) 3 Nm
  - d) None of the above
- Q.96) When D is the diameter of the molecules of a gas in a confined space, the collision frequency will be proportional to
- a) D
  - b)  $1/D$
  - c)  $D^2$
  - d)  $1/D^2$
- Q.97) For a reversible adiabatic compression in a steady flow process, the work done per unit mass is integration of
- a)  $P dV$
  - b)  $V dp$
  - c)  $T dS$
  - d)  $S dT$
- Q.98) Specific heat of gas  $C_p = C_v$  , at
- a) Absolute zero
  - b) Critical temperature
  - c) Triple point
  - d) All temperatures
- Q.99) In a strained material one of the principal stress equals twice the others. If the maximum shear stress is  $\tau_{max}$ , then the value of maximum principal stress is
- a)  $\tau_{max}$
  - b)  $2 \tau_{max}$
  - c)  $4 \tau_{max}$
  - d)  $8 \tau_{max}$
- Q.100) The absolute zero can be obtained at a temperature of
- a) 0 degree Celsius
  - b) 273 degree Celsius
  - c) + 273 Kelvin
  - d) None of the above

- Q.1) શબ્દ સમૂહ માટે એક શબ્દ આપો - 'જેને કોઈ શત્રુ નથી તે'
- a) એકલવીર  
b) શત્રુ વિનાનો  
c) મિત્રતા  
d) અજાતશત્રુ
- Q.2) ભારતની સૌ પ્રથમ ઓપન યુનિવર્સિટી કઈ છે?
- a) ઈન્દિરા ગાંધી ઓપન યુનિ.  
b) જવાહરલાલ નહેરુ ઓપન યુનિ.  
c) અટલ બિહારી વાજપાઈ ઓપન યુનિ.  
d) ડૉ. બી. આર. આંબેડકર ઓપન યુનિ.
- Q.3) ભાવવાચક નામ બનાવો - ઉચિત
- a) ચોક્કસ  
b) ઔચિત્ય  
c) યોગ્ય  
d) લગભગ
- Q.4) ભારતીય બંધારણની કઈ કલમ જમ્મુ-કાશ્મીરને ખાસ દરજ્જો આપે છે. ?
- a) ૪૭૦  
b) ૩૭૧  
c) ૩૭૦  
d) ૩૭૯
- Q.5) અર્થ સમજાવો - ચિર
- a) વિશાળ  
b) મોટું  
c) લાંબુ  
d) પૂષ્કળ
- Q.6) ભારતનાં સૌ પ્રથમ મહિલા પ્રેસ ફોટોગ્રાફર કોણ છે. ?
- a) હેમા પ્યારેલાલ  
b) હેમાય વ્યારાવાલા  
c) હેમાલી વ્યારાવાલા  
d) હેમાય પ્યારેલાલ
- Q.7) I \_\_\_\_\_ my job. Why? It's very boring.
- a) don't like  
b) likes  
c) like  
d) doesn't like
- Q.8) Coffee ? No, thanks. I never \_\_\_\_\_ coffee.
- a) don't drink  
b) drink  
c) drinks  
d) not drink
- Q.9) Do I need an umbrella? No, it \_\_\_\_\_
- a) is rain  
b) rains  
c) isn't raining  
d) is raining
- Q.10) સાચી જોડણી લખો. "અતિશયોકતી"
- a) અતીશ્યોકતિ  
b) અતિશયોકતિ  
c) અતીશ્યોકતી  
d) અતિશયોક્તિ
- Q.11) Listen! Can you hear it ? Yes somebody \_\_\_\_\_
- a) singing  
b) is singing  
c) are singing  
d) sing
- Q.12) Where \_\_\_\_\_ live ? They live in Ahmedabad.
- a) do they  
b) do we  
c) they  
d) do
- Q.13) ફરિકોટા શા માટે જાણીતું છે?
- a) અણમથક  
b) ઈન્ફોસીટી  
c) સેટેલાઈટ લોચીંગ સ્ટેશન  
d) પાવર પ્રોજેક્ટ
- Q.14) ભારતમાં સતી પ્રથા બંધ કરાવનાર સમાજસુધારક કોણ હતા?
- a) ડૉ. આંબેડકર  
b) રાજા રામમોહનરાય  
c) રાણી લક્ષ્મીબાઈ  
d) કસ્તૂરબા ગાંધી
- Q.15) ભારતનો ભાખરાનાંગલ બંધ કઈ નદી પર આવેલો છે.
- a) બિયાસ  
b) સિંધુ  
c) ગંગા  
d) સતલજ

- Q.16) કયા દેશને પ્રાચીન સમયમાં ગાંધાર તરીકે ઓળખવામાં આવતો હતો.  
 a) પાકિસ્તાન b) અફઘાનિસ્તાન  
 c) તુર્કિસ્તાન d) બલૂચિસ્તાન
- Q.17) નર્વસ નાઈટ્રી શબ્દ કઈ રમત સાથે જોડાયેલો છે ?  
 a) કબ્બડી b) વોલીબોલ  
 c) ફૂટબોલ d) ક્રિકેટ
- Q.18) ગુજરાતના બ્રાન્ડ એમ્બેસેડર તરીકે કોણ કામ કરી રહ્યું છે.  
 a) અજય દેવગણ b) અમિતાભ બચ્ચન  
 c) આમિરખાન d) અક્ષયકુમાર
- Q.19) સમ્રાટ અકબરે બુલંદ દરવાજા તેના કયા રાજ્યના વિજયની સ્મૃતિમાં બંધાવેલા છે ?  
 a) મહારાષ્ટ્ર b) ગુજરાત  
 c) મધ્યપ્રદેશ d) દિલ્હી
- Q.20) મનુભાઈ પંચોળીનું ઉપનામ જણાવો.  
 a) દર્શક b) પ્રકાશક  
 c) આકર્ષક d) પ્રત્યક્ષ
- Q.21) સંધિ છોડો – ઉત્તરોત્તર  
 a) ઉત્તર + ઉત્તર b) ઉત્તર + ઉત્તર  
 c) ઉત્તરો + ઉત્તર d) ઉત્તર + ઉત્તર
- Q.22) નરસિંહ મહેતાના પદો કયા નામે ઓળખાય છે ?  
 a) અજવાળિયાં b) પ્રભાતિયાં  
 c) સૂર્યોદય d) અંધારિયાં
- Q.23) રૂઢિપ્રયોગનો અર્થ સમજાવો - રૂવાડુંય ન ફરકવું  
 a) ખબર ન પડવી b) સહેજે ખ્યાલ ન આવવો  
 c) સહેજ પણ અસર ન થવી d) સહેજમાં ખબર પડી જવી.
- Q.24) કલાપીનું મૂળ નામ જણાવો  
 a) સૂરમિતસિંહ તખ્તસિંહ ગોહિલ b) સૂરજિતસિંહ તખ્તસિંહજી ગોહિલ  
 c) સૂરસિંહજી તખ્તસિંહજી ગોહિલ d) સૂરસિંહજી તખ્તજી ગોહિલ
- Q.25) સંધિ છોડો – ચિરાયુ  
 a) ચીર + આયુ b) ચિર + આયુ  
 c) ચિર + આયુ d) ચિરા + આયુ
- Q.26) The weight of one cubic meter of air would be around  
 a) 13 gm b) 130 gm  
 c) 1300 gm d) 13000 gm
- Q.27) Transistor interjunction capacitance causes the following in the amplifier  
 a) noise b) harmonic distortion  
 c) phase shift d) parasitic oscillation
- Q.28) A real gas compared to ideal gas at very high pressure occupies  
 a) Less volume b) More volume  
 c) Same volume d) More/less depending on gas
- Q.29) Which of the following displays has minimum power consumption  
 a) light emitting diode (LED) b) liquid crystal display (LCD)  
 c) nixie tube d) fluorescent
- Q.30) Sea water as compared to distilled water will boil at  
 a) Same temperature b) Higher temperature  
 c) Lower temperature d) Unpredictable



- Q.31) Which of the following rays has the lowest wavelength  
 a) radio waves  
 b) x-rays  
 c) infrared waves  
 d) ultraviolet waves
- Q.32) A car travels from one station to another along a straight road. First half of the distance is covered with velocity of 60 Km/hr. and the second half is covered with velocity of 90 Km/hr. The average speed of the car is  
 a) 72 km/hr  
 b) 75km/hr  
 c) 78 km/hr  
 d) None of the above
- Q.33) In simple harmonic motion , acceleration is proportional to  
 a) displacement  
 b) linear velocity  
 c) angular velocity  
 d) rate of change of angular velocity
- Q.34) A system of three forces acts on a body and keeps it in equilibrium. The forces need to be  
 a) Coplanar Only  
 b) Concurrent Only  
 c) Coplanar as well as Concurrent  
 d) Coplanar but may be or may not be Concurrent
- Q.35) A particle covers equal distance around circular path in equal intervals of time. Which of the following parameters connected with the motion of particle remains constant with time?  
 a) displacement  
 b) speed  
 c) velocity  
 d) acceleration
- Q.36) All of the following are scalar quantities except  
 a) Energy  
 b) Temperature  
 c) Time  
 d) Displacement
- Q.37) A Body is dropped from rest at height h. It covers a distance of  $\frac{9}{25}h$  in the last second. The height is about  
 a) 100 m  
 b) 115 m  
 c) 125 m  
 d) 150 m
- Q.38) A floating battery is one  
 a) Which is getting charged  
 b) In which feeding loads  
 c) In which battery voltage is equal to charger  
 d) Which gets charged and discharged simultaneously
- Q.39) The function of commutator in a DC machine is  
 a) To improve commutation  
 b) To improve efficiency of motor  
 c) To change alternative voltage to direct  
 d) To change direct voltage to alternative voltage
- Q.40) Which of the following parameter will be more for 16 gauge copper wire in comparison to 14 gauge copper wire  
 a) Cost  
 b) Strength  
 c) Resistance  
 d) Weight
- Q.41) The starting torque of slip ring induction motor is increased by  
 a) Adding external resistance to the rotor  
 b) Adding external induction to the rotor  
 c) Increasing the voltage fed to the motor  
 d) Adding external capacitance to the rotor
- Q.42) The induction of a coil can be increased by  
 a) Decreasing number of turns  
 b) Increasing core length  
 c) Using core material of highly relative  
 d) None of the above
- Q.43) If A.C. is fed by mistake to a DC motor then DC motor will  
 a) Burn as the eddy current in the field  
 b) Run at its normal speed  
 c) Run at a lower speed  
 d) Run continuously but the sparking takes place at brushes
- Q.44) Full load current of a 10 HP, 3 phase, 440V induction motor is of order of  
 a) 7 A  
 b) 14 A  
 c) 21 A  
 d) 28 A

- Q.45) Brinell number of a metal or an alloy is a measure of its
- tensile strength
  - toughness
  - malleability
  - hardness
- Q.46) A solution that can resist change in its pH on addition of alkali/acid is called
- Buffer solution
  - Neutral solution
  - Ideal solution
  - Zero pH solution
- Q.47) Which of the following materials has a linear stress strain curve
- low carbon steel
  - copper
  - aluminium
  - rubber
- Q.48) Which of the following has least hardness
- Diamond
  - Topaz
  - Quartz
  - Talc
- Q.49) For a solid cone of height  $h$ , the CG lies on the axis at the distance above the base equal to
- $h/4$
  - $h/3$
  - $2h/3$
  - $3h/8$
- Q.50) If A and B are non singular matrices of same order, then  $(AB)^{-1}$  is equal to
- $A^{-1}B^{-1}$
  - $B^{-1}A^{-1}$
  - $AB^{-1}$
  - $AB$
- Q.51) When D is the diameter of the molecules of a gas in a confined space, the collision frequency will be proportional to
- D
  - $1/D$
  - $D^2$
  - $1/D^2$
- Q.52) For a reversible adiabatic compression in a steady flow process, the work done per unit mass is integration of
- $P dV$
  - $V dp$
  - $T dS$
  - $S dT$
- Q.53) Specific heat of gas  $C_p = C_v$ , at
- Absolute zero
  - Critical temperature
  - Triple point
  - All temperatures
- Q.54) In a strained material one of the principal stress equals twice the others. If the maximum shear stress is  $\tau_{max}$ , then the value of maximum principal stress is
- $\tau_{max}$
  - $2 \tau_{max}$
  - $4 \tau_{max}$
  - $8 \tau_{max}$
- Q.55) The absolute zero can be obtained at a temperature of
- 0 degree Celsius
  - 273 degree Celsius
  - + 273 Kelvin
  - None of the above
- Q.56) A dog weighing 2 kgs jump from the floor to window 1.5 mtr high . Neglecting the air drag , work done by dog is
- Zero
  - Nearly 30 Nm
  - 3 Nm
  - None of the above
- Q.57) Friction losses are more in the following type of instruments
- Dynamometer type
  - Moving coil type
  - Moving iron type
  - Moving magnet type

- Q.58) Area bound by parabola  $y = 2x^2$  and the line  $y = x-4$  is equal to  
 a) 6  
 b) 18  
 c) Infinity  
 d) None of these
- Q.59) The internal impedance of an accurate voltmeter should be  
 a) As low as possible  
 b) Low  
 c) Negligible  
 d) Very high
- Q.60) The probability of getting a number between 1 and 100 which is divisible by 1 itself only is  
 a)  $27/185$   
 b)  $23/97$   
 c)  $25/98$   
 d) None of these
- Q.61) Which parameter is increased by a step up transformer  
 a) Current  
 b) Resistance  
 c) Voltage  
 d) Power
- Q.62) The system of linear equations  
 $(4d-1)x + y + z = 0$   
 $-y + z = 0$   
 $(4d-1) = 0$   
 Has a non trivial sol. , if d is equal  
 a)  $1/2$   
 b)  $1/4$   
 c)  $3/4$   
 d) 1
- Q.63) For an irrotational flow the equation  $\partial^2 \Phi / \partial x^2 + \partial^2 \Phi / \partial y^2$  is known as  
 a) Bernoulli's equation  
 b) Cauchy Riemann's equation  
 c) Euler's Equation  
 d) Laplace Equation
- Q.64) Unsteady uniform flow is flow through a / an  
 a) Expanding tube at an increasing rate  
 b) Expanding tube at constant rate  
 c) Long pipe at decreasing rate  
 d) Long pipe at constant rate
- Q.65) For measuring flow by venturimeter it should be installed in  
 a) Vertical line  
 b) Horizontal line  
 c) Inclined line with upward flow  
 d) In any direction and in any location
- Q.66) A piezometer cannot be used for pressure measurement in pipes when  
 a) Pressure difference is low  
 b) Velocity is high  
 c) Fluid in the pipe is gas  
 d) Fluid is Highly viscous
- Q.67) For general stress calculation , a cylinder is considered as thin if,  
 a)  $t/d \leq 0.075$   
 b)  $t/d \leq 0.05$   
 c)  $t/d \leq 0.02$   
 d)  $t/d \leq 0.01$
- Q.68) To replace a compound pipe by a new pipe , the pipes will be equivalent when both pipes have same  
 a) Length and flow  
 b) Diameter and flow  
 c) Loss of head and flow  
 d) Length and loss of head
- Q.69) If V is the mean velocity of the flow , then according to Darcy Weisbach equation for pipe flow, energy loss over a length of pipe is proportional to  
 a) V  
 b)  $1/V$   
 c)  $V^2$   
 d)  $\sqrt{V}$
- Q.70) In laminar flow , maximum velocity at the centre of the pipe is how many times to the average velocity?  
 a) 2  
 b) 3  
 c) 4  
 d) None of these

- Q.71) With rise in temperature , the specific heat of water
- increases
  - decreases
  - first decreases to minimum and then increases
  - remains constant
- Q.72) The flow of water in the pipe of diameter 3000 mm can be measured by
- Venturimeter
  - Rotameter
  - Pilot tube
  - Orifice plate
- Q.73) The sequence of the process that eventually returns the working substance to its original state ,is known as
- Event
  - Thermodynamic cycle
  - Thermodynamic property
  - None of these
- Q.74) What would be the expectation of the number of failures preceding the first success in an infinite series of independent trials with constant probability of success  $p$  ?
- $1/p$
  - $1/q$
  - $q/p$
  - none of these
- Q.75) A system comprising of a single phase , is known as
- Open system
  - Closed system
  - Homogenous system
  - Heterogeneous system
- Q.76) The specific heat of an ideal gas depends on its
- temperature
  - pressure
  - molecular weight and structure
  - volume
- Q.77) The cells are connected in series to
- Increase the current output
  - Decrease the internal resistance
  - Increase the voltage output
  - Increase the power rating
- Q.78) One cubic centimetre of metal would contain the number of atoms of the following order
- $10^5$
  - $10^{12}$
  - $10^{18}$
  - $10^{22}$
- Q.79) The ease with which observation can be made accurately is referred to as
- Readability
  - Sensitivity
  - Accuracy
  - Precision
- Q.80) Crystal structure of a material can be examined by
- Microscope
  - Optical microscope
  - Electron microscope
  - X-ray and electron diffraction
- Q.81) The impedance at frequencies above resonance frequency is
- Purely inductive
  - Purely capacitive
  - Purely resistive
  - Complex
- Q.82) Rain drops are spherical because of
- viscosity
  - air resistance
  - surface tension
  - atmospheric pressure
- Q.83) A hydrometer is used to determine
- Relative humidity
  - Buoyant force
  - Specific gravity of fluids
  - A fixed region in space
- Q.84) Energy loss in flow through nozzle as compared to venturimeter is
- Same
  - More
  - Less
  - Unpredictable

- Q.85) 1 Micron is equal to
- |                     |                      |
|---------------------|----------------------|
| a) $10^{-4}$ meters | b) $10^{-6}$ meters  |
| c) $10^{-9}$ meters | d) $10^{-12}$ meters |
- Q.86) If pressure at any point in the liquid approaches the vapour pressure, liquid starts vaporising and creates pockets or bubbles of dissolved gases and vapours. This phenomenon is
- |                    |               |
|--------------------|---------------|
| a) Surface tension | b) Adhesion   |
| c) Vaporisation    | d) Cavitation |
- Q.87) The two important forces for a floating body are
- |                          |                       |
|--------------------------|-----------------------|
| a) buoyancy, gravitation | b) buoyancy, pressure |
| c) buoyancy, inertial    | d) inertial, gravity  |
- Q.88) We \_\_\_ dinner now. Can you phone later, please?
- |           |               |
|-----------|---------------|
| a) having | b) are having |
| c) have   | d) are have   |
- Q.89) What do you usually do at weekends? I usually \_\_\_\_\_ a bike.
- |               |          |
|---------------|----------|
| a) riding     | b) ride  |
| c) and riding | c) rides |
- Q.90) The surface roughness on a drawing is represented by
- |                  |              |
|------------------|--------------|
| a) Circles       | b) Triangles |
| c) Zig zag lines | d) Square    |
- Q.91) They \_\_\_\_\_ milk. Really?
- |               |                   |
|---------------|-------------------|
| a) not liking | b) are not liking |
| c) likes      | d) don't like     |
- Q.92) Element of the indicating device carrying the scale is called
- |               |            |
|---------------|------------|
| a) Dial       | b) Housing |
| c) Transducer | d) Index   |
- Q.93) Sachin is a vegetarian. He \_\_\_\_\_ meat.
- |                 |                |
|-----------------|----------------|
| a) eat          | b) not eat     |
| c) isn't eating | d) doesn't eat |
- Q.94) Where are the children? They \_\_\_\_\_ in the garden.
- |                |          |
|----------------|----------|
| a) are playing | b) play  |
| c) playing     | d) plays |
- Q.95) The heat transfer takes place according to
- |                                 |                                |
|---------------------------------|--------------------------------|
| a) Zeroth law of thermodynamics | b) First Law of thermodynamics |
| c) Second Law of Thermodynamics | d) Kirchoff's law              |
- Q.96) The passage of current in an electrolyte is due to the movement of
- |              |              |
|--------------|--------------|
| a) Electrons | b) Particles |
| c) Molecules | d) Ions      |
- Q.97) Absorptivity and reflectivity of transparent body are
- |            |            |
|------------|------------|
| a) 0 and 0 | b) 1 and 0 |
| c) 0 and 1 | d) 1 and 1 |
- Q.98) Which of the following phosphorous is used as poison
- |          |           |
|----------|-----------|
| a) Black | b) Red    |
| c) White | d) Violet |
- Q.99) Emissive power of a body depends upon
- |                    |                 |
|--------------------|-----------------|
| a) Wavelength      | b) Temperature  |
| c) Physical nature | d) All of these |
- Q.100) Which of the following forces do not act in case of fluids?
- |                      |                  |
|----------------------|------------------|
| a) centrifugal force | b) tensile force |
| c) vibratory force   | d) elastic force |

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 Has a non trivial sol. , if d is equal
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  - 1/4
  - 3/4
  - 1
- Q.25) Friction losses are more in the following type of instruments
- Dynamometer type
  - Moving coil type
  - Moving iron type
  - Moving magnet type
- Q.26) The passage of current in an electrolyte is due to the movement of
- Electrons
  - Particles
  - Molecules
  - Ions
- Q.27) Absorptivity and reflectivity of transparent body are
- 0 and 0
  - 1 and 0
  - 0 and 1
  - 1 and 1
- Q.28) Which of the following phosphorous is used as poison
- Black
  - Red
  - White
  - Violet

- Q.29) Emissive power of a body depends upon  
a) Wavelength  
b) Temperature  
c) Physical nature  
d) All of these
- Q.30) Which of the following forces do not act in case of fluids?  
a) centrifugal force  
b) tensile force  
c) vibratory force  
d) elastic force
- Q.31) The heat transfer takes place according to  
a) Zeroth law of thermodynamics  
b) First Law of thermodynamics  
c) Second Law of Thermodynamics  
d) Kirchoff's law
- Q.32) What do you usually do at weekends ? I usually \_\_\_\_\_ a bike.  
a) riding  
b) ride  
c) and riding  
d) rides
- Q.33) The surface roughness on a drawing is represented by  
a) Circles  
b) Triangles  
c) Zig zag lines  
d) Square
- Q.34) They \_\_\_\_\_ milk. Really ?  
a) not liking  
b) are not liking  
c) likes  
d) don't like
- Q.35) Element of the indicating device carrying the scale is called  
a) Dial  
b) Housing  
c) Transducer  
d) Index
- Q.36) Sachin is a vegetarian. He \_\_\_\_\_ meat.  
a) eat  
b) not eat  
c) isn't eating  
d) doesn't eat
- Q.37) We \_\_\_\_\_ dinner now. Can you phone later, please?  
a) having  
b) are having  
c) have  
d) are have
- Q.38) Where are the children ? They \_\_\_\_\_ in the garden.  
a) are playing  
b) play  
c) playing  
d) plays
- Q.39) The cells are connected in series to  
a) Increase the current output  
b) Decrease the internal resistance  
c) Increase the voltage output  
d) Increase the power rating
- Q.40) One cubic centimetre of metal would contain the number of atoms of the following order  
a)  $10^5$   
b)  $10^{12}$   
c)  $10^{18}$   
d)  $10^{22}$
- Q.41) The ease with which observation can be made accurately is referred to as  
a) Readability  
b) Sensitivity  
c) Accuracy  
d) Precision
- Q.42) Crystal structure of a material can be examined by  
a) Microscope  
b) Optical microscope  
c) Electron microscope  
d) X-ray and electron diffraction
- Q.43) The impedance at frequencies above resonance frequency is  
a) Purely inductive  
b) Purely capacitive  
c) Purely resistive  
d) Complex



- Q.44) The specific heat of an ideal gas depends on its  
 a) temperature  
 b) pressure  
 c) molecular weight and structure  
 d) volume
- Q.45) A hydrometer is used to determine  
 a) Relative humidity  
 b) Buoyant force  
 c) Specific gravity of fluids  
 d) A fixed region in space
- Q.46) Energy loss in flow through nozzle as compared to venturimeter is  
 a) Same  
 b) More  
 c) Less  
 d) Unpredictable
- Q.47) 1 Micron is equal to  
 a)  $10^{-4}$  meters  
 b)  $10^{-6}$  meters  
 c)  $10^{-9}$  meters  
 d)  $10^{-12}$  meters
- Q.48) If pressure at any point in the liquid approaches the vapour pressure, liquid starts vaporising and creates pockets or bubbles of dissolved gases and vapours. This phenomenon is  
 a) Surface tension  
 b) Adhesion  
 c) Vaporisation  
 d) Cavitation
- Q.49) The two important forces for a floating body are  
 a) buoyancy, gravitation  
 b) buoyancy, pressure  
 c) buoyancy, inertial  
 d) inertial, gravity
- Q.50) Rain drops are spherical because of  
 a) viscosity  
 b) air resistance  
 c) surface tension  
 d) atmospheric pressure
- Q.51) સંધિ છોડો - ઉત્તરોત્તર  
 a) ઉત્તર + ઉત્તર  
 b) ઉત્તર + ઉત્તર  
 c) ઉત્તરો + ઉત્તર  
 d) ઉત્તર + ઉત્તર
- Q.52) નરસિંહ મહેતાના પદો કયા નામે ઓળખાય છે ?  
 a) અજવાળિયાં  
 b) પ્રભાતિયાં  
 c) સૂર્યોદય  
 d) અંધારિયાં
- Q.53) રૂઢિપ્રયોગનો અર્થ સમજાવો - રૂવાડુંય ન ફરકવું  
 a) ખબર ન પડવી  
 b) સહેજે ખ્યાલ ન આવવો  
 c) સહેજે પણ અસર ન થવી  
 d) સહેજમાં ખબર પડી જવી.
- Q.54) કલાપીનું મૂળ નામ જણાવો  
 a) સૂરમિતસિંહ તખ્તસિંગ ગોહિલ  
 b) સૂરજિતસિંગ તખ્તસિંહજી ગોહિલ  
 c) સૂરસિંહજી તખ્તસિંહજી ગોહિલ  
 d) સૂરસિંહજી તખ્તજી ગોહિલ
- Q.55) સંધિ છોડો - ચિરાયુ  
 a) ચીર + આયુ  
 b) ચિર + આયુ  
 c) ચિર + આયુ  
 d) ચિરા + આયુ
- Q.56) મનુભાઈ પંચોળીનું ઉપનામ જણાવો.  
 a) દર્શક  
 b) પ્રકાશક  
 c) આકર્ષક  
 d) પ્રત્યક્ષ
- Q.57) ભારતમાં સતી પ્રથા બંધ કરાવનાર સમાજસુધારક કોણ હતા?  
 a) ડૉ. આંબેડકર  
 b) રાજા રામમોહનરાય  
 c) રાણી લક્ષ્મીબાઈ  
 d) કસ્તૂરબા ગાંધી

- Q.58) ભારતનો ભાખરાનાંગલ બંધ કઈ નદી પર આવેલો છે.  
 a) બિયાસ  
 b) સિંધુ  
 c) ગંગા  
 d) સત્તલજ
- Q.59) કયા દેશને પ્રાચીન સમયમાં ગાંધાર તરીકે ઓળખવામાં આવતો હતો.  
 a) પાકિસ્તાન  
 b) અફઘાનિસ્તાન  
 c) તૂર્કિસ્તાન  
 d) બલૂચિસ્તાન
- Q.60) નર્વેસ નાઈન્ટી શબ્દ કઈ રમત સાથે જોડાયેલો છે ?  
 a) કબ્બડી  
 b) વોલીબોલ  
 c) ફૂટબોલ  
 d) ક્રિકેટ
- Q.61) ગુજરાતના બ્રાન્ડ એમ્બેસેડર તરીકે કોણ કામ કરી રહ્યુ છે.  
 a) અજય દેવગણ  
 b) અમિતાભ બચ્ચન  
 c) આમિરખાન  
 d) અક્ષયકુમાર
- Q.62) હરિકોટા શા માટે જાણીતું છે?  
 a) અણમથક  
 b) ઈન્ફોસીટી  
 c) સેટેલાઈટ લોચીંગ સ્ટેશન  
 d) પાવર પ્રોજેક્ટ
- Q.63) સમ્રાટ અકબરે બુલંદ દરવાજા તેના કયા રાજ્યના વિજયની સ્મૃતિમાં બંધાવેલા છે ?  
 a) મહારાષ્ટ્ર  
 b) ગુજરાત  
 c) મધ્યપ્રદેશ  
 d) દિલ્હી
- Q.64) ભારતની સૌ પ્રથમ ઓપન યુનિવર્સિટી કઈ છે.?  
 a) ઈન્દિરા ગાંધી ઓપન યુનિ.  
 b) જવાહરલાલ નહેરુ ઓપન યુનિ.  
 c) અટલ બિહારી વાજપાઈ ઓપન યુનિ.  
 d) ડૉ. બી. આર. આંબેડકર ઓપન યુનિ.
- Q.65) ભાવવાચક નામ બનાવો - ઉચિત  
 a) ચોક્કસ  
 b) ઔચિત્ય  
 c) યોગ્ય  
 d) લગભગ
- Q.66) ભારતીય બંધારણની કઈ કલમ જમ્મુ-કાશ્મીરને ખાસ દરજ્જો આપે છે. ?  
 a) ૪૭૦  
 b) ૩૭૧  
 c) ૩૭૦  
 d) ૩૭૯
- Q.67) અર્થ સમજાવો - ચિર  
 a) વિશાળ  
 b) મોટું  
 c) લાંબુ  
 d) પૂષ્કળ
- Q.68) ભારતનાં સૌ પ્રથમ મહિલા પ્રેસ ફોટોગ્રાફર કોણ છે. ?  
 a) હેમા પ્યારેલાલ  
 b) હોમાય વ્યારાવાલા  
 c) હેમાલી વ્યારાવાલા  
 d) હીમાય પ્યારેલાલ
- Q.69) શબ્દ સમૂહ માટે એક શબ્દ આપો - 'જને કોઈ શત્રુ નથી તે'  
 a) એકલવીર  
 b) શત્રુ વિનાનો  
 c) મિત્રતા  
 d) અજાતશત્રુ
- Q.70) Coffee ? No, thanks. I never \_\_\_\_\_ coffee.  
 a) don't drink  
 b) drink  
 c) drinks  
 d) not drink
- Q.71) Do I need an umbrella? No, it \_\_\_\_\_  
 a) is rain  
 b) rains  
 c) isn't raining  
 d) is raining

- Q.72) સાચી જોડણી લખો. “અતિશયોકતી”  
 a) અતીશ્યોકતિ  
 b) અતિશયોકતિ  
 c) અતીશ્યોકતી  
 d) અતિશયોકિત
- Q.73) Listen! Can you hear it? Yes somebody \_\_\_\_\_  
 a) singing  
 b) is singing  
 c) are singing  
 d) sing
- Q.74) Where \_\_\_\_\_ live? They live in Ahmedabad.  
 a) do they  
 b) do we  
 c) they  
 d) do
- Q.75) I \_\_\_\_\_ my job. Why? It's very boring.  
 a) don't like  
 b) likes  
 c) like  
 d) doesn't like
- Q.76) A solution that can resist change in its pH on addition of alkali/acid is called  
 a) Buffer solution  
 b) Neutral solution  
 c) Ideal solution  
 d) Zero pH solution
- Q.77) Which of the following materials has a linear stress strain curve  
 a) low carbon steel  
 b) copper  
 c) aluminium  
 d) rubber
- Q.78) Which of the following has least hardness  
 a) Diamond  
 b) Topaz  
 c) Quartz  
 d) Talc
- Q.79) For a solid cone of height h, the CG lies on the axis at the distance above the base equal to  
 a)  $h/4$   
 b)  $h/3$   
 c)  $2h/3$   
 d)  $3h/8$
- Q.80) If A and B are non singular matrices of same order, then  $(AB)^{-1}$  is equal to  
 a)  $A^{-1}B^{-1}$   
 b)  $B^{-1}A^{-1}$   
 c)  $AB^{-1}$   
 d) AB
- Q.81) Brinell number of a metal or an alloy is a measure of its  
 a) tensile strength  
 b) toughness  
 c) malleability  
 d) hardness
- Q.82) The function of commutator in a DC machine is  
 a) To improve commutation  
 b) To improve efficiency of motor  
 c) To change alternative voltage to direct voltage  
 d) To change direct voltage to alternative voltage
- Q.83) Which of the following parameter will be more for 16 gauge copper wire in comparison to 14 gauge copper wire  
 a) Cost  
 b) Strength  
 c) Resistance  
 d) Weight
- Q.84) The starting torque of slip ring induction motor is increased by  
 a) Adding external resistance to the rotor  
 b) Adding external induction to the rotor  
 c) Increasing the voltage fed to the motor  
 d) Adding external capacitance to the rotor
- Q.85) The induction of a coil can be increased by  
 a) Decreasing number of turns  
 b) Increasing core length  
 c) Using core material of highly relative permeability  
 d) None of the above
- Q.86) If A.C. is fed by mistake to a DC motor then DC motor will  
 a) Burn as the eddy current in the field produce heat  
 b) Run at its normal speed  
 c) Run at a lower speed  
 d) Run continuously but the sparking takes place at the brushes

- Q.87) A floating battery is one
- a) Which is getting charged
  - b) In which feeding loads
  - c) In which battery voltage is equal to charger voltage
  - d) Which gets charged and discharged simultaneously
- Q.88) Full load current of a 10 HP, 3 phase, 440V induction motor is of order of
- a) 7 A
  - b) 14 A
  - c) 21 A
  - d) 28 A
- Q.89) Transistor interjunction capacitance causes the following in the amplifier
- a) noise
  - b) harmonic distortion
  - c) phase shift
  - d) parasitic oscillation
- Q.90) A real gas compared to ideal gas at very high pressure occupies
- a) Less volume
  - b) More volume
  - c) Same volume
  - d) More/less depending on gas
- Q.91) Which of the following displays has minimum power consumption
- a) light emitting diode (LED)
  - b) liquid crystal display (LCD)
  - c) nixie tube
  - d) fluorescent
- Q.92) Sea water as compared to distilled water will boil at
- a) Same temperature
  - b) Higher temperature
  - c) Lower temperature
  - d) Unpredictable
- Q.93) Which of the following rays has the lowest wavelength
- a) radio waves
  - b) x-rays
  - c) infrared waves
  - d) ultraviolet waves
- Q.94) The weight of one cubic meter of air would be around
- a) 13 gm
  - b) 130 gm
  - c) 1300 gm
  - d) 13000 gm
- Q.95) In simple harmonic motion, acceleration is proportional to
- a) displacement
  - b) linear velocity
  - c) angular velocity
  - d) rate of change of angular velocity
- Q.96) A system of three forces acts on a body and keeps it in equilibrium. The forces need to be
- a) Coplanar Only
  - b) Concurrent Only
  - c) Coplanar as well as Concurrent
  - d) Coplanar but may be or may not be Concurrent
- Q.97) A particle covers equal distance around circular path in equal intervals of time. Which of the following parameters connected with the motion of particle remains constant with time?
- a) displacement
  - b) speed
  - c) velocity
  - d) acceleration
- Q.98) All of the following are scalar quantities except
- a) Energy
  - b) Temperature
  - c) Time
  - d) Displacement
- Q.99) A Body is dropped from rest at height  $h$ . It covers a distance of  $\frac{9}{25}h$  in the last second. The height is about
- a) 100 m
  - b) 115 m
  - c) 125 m
  - d) 150 m
- Q.100) A car travels from one station to another along a straight road. First half of the distance is covered with velocity of 60 Km/hr. and the second half is covered with velocity of 90 Km/hr. The average speed of the car is
- a) 72 km/hr
  - b) 75km/hr
  - c) 78 km/hr
  - d) None of the above

## Sr Answer Key

A		B		C		D	
Que_No	Group	Que_No	Group	Que_No	Group	Que_No	Group
1	d	1	d	1	d	1	c
2	c	2	b	2	d	2	c
3	a	3	b	3	b	3	b
4	c	4	c	4	c	4	c
5	c	5	d	5	c	5	c
6	b	6	a	6	b	6	a
7	a	7	a	7	a	7	d
8	c	8	b	8	b	8	d
9	d	9	c	9	c	9	c
10	b	10	d	10	d	10	b
11	a	11	b	11	b	11	d
12	d	12	c	12	a	12	d
13	b	13	b	13	c	13	b
14	a	14	a	14	b	14	b
15	c	15	c	15	d	15	a
16	a	16	c	16	b	16	c
17	d	17	a	17	d	17	d
18	b	18	b	18	b	18	b
19	c	19	a	19	b	19	c
20	c	20	a	20	a	20	c
21	c	21	a	21	d	21	d
22	a	22	c	22	b	22	c
23	d	23	d	23	c	23	c
24	a	24	a	24	c	24	b
25	b	25	d	25	c	25	a
26	c	26	b	26	c	26	d
27	d	27	c	27	d	27	b
28	a	28	b	28	a	28	c
29	b	29	d	29	b	29	b
30	c	30	b	30	b	30	b
31	c	31	d	31	a	31	c
32	c	32	b	32	a	32	b
33	c	33	c	33	c	33	c
34	a	34	a	34	c	34	d
35	c	35	d	35	b	35	a
36	c	36	b	36	d	36	d
37	b	37	c	37	c	37	b
38	d	38	c	38	c	38	a
39	a	39	a	39	d	39	c
40	c	40	a	40	c	40	d
41	b	41	b	41	a	41	a
42	b	42	c	42	c	42	d
43	c	43	d	43	a	43	a
44	b	44	b	44	b	44	a
45	d	45	b	45	d	45	c
46	d	46	d	46	a	46	a
47	d	47	d	47	c	47	b
48	d	48	b	48	d	48	a
49	c	49	c	49	a	49	a
50	b	50	c	50	b	50	c
51	a	51	a	51	c	51	d

IC/SI

## Sr Answer Key

A		B		C		D	
Que_No	Group	Que_No	Group	Que_No	Group	Que_No	Group
52	a	52	c	52	b	52	b
53	c	53	d	53	a	53	c
54	a	54	c	54	c	54	c
55	c	55	a	55	d	55	c
56	b	56	c	56	b	56	a
57	b	57	b	57	a	57	b
58	b	58	b	58	c	58	d
59	c	59	d	59	d	59	b
60	b	60	a	60	c	60	d
61	d	61	c	61	c	61	b
62	c	62	d	62	b	62	c
63	d	63	a	63	d	63	b
64	d	64	c	64	d	64	d
65	a	65	a	65	d	65	b
66	a	66	c	66	c	66	c
67	c	67	c	67	b	67	c
68	a	68	b	68	d	68	b
69	a	69	d	69	b	69	d
70	c	70	a	70	a	70	b
71	b	71	c	71	c	71	c
72	d	72	d	72	c	72	d
73	b	73	a	73	b	73	b
74	d	74	b	74	c	74	a
75	a	75	b	75	c	75	a
76	b	76	d	76	a	76	a
77	c	77	d	77	c	77	c
78	a	78	d	78	d	78	d
79	a	79	d	79	a	79	a
80	b	80	c	80	d	80	b
81	d	81	b	81	a	81	d
82	c	82	b	82	c	82	d
83	b	83	c	83	c	83	c
84	a	84	a	84	a	84	a
85	c	85	c	85	b	85	c
86	d	86	c	86	a	86	a
87	c	87	b	87	a	87	c
88	c	88	c	88	b	88	b
89	b	89	b	89	b	89	d
90	d	90	a	90	c	90	a
91	b	91	c	91	d	91	b
92	d	92	d	92	a	92	b
93	c	93	c	93	d	93	a
94	d	94	c	94	a	94	c
95	d	95	b	95	c	95	c
96	c	96	c	96	d	96	c
97	b	97	b	97	b	97	b
98	b	98	a	98	c	98	d
99	b	99	c	99	b	99	c
100	b	100	d	100	b	100	a

IC/SI