



Question Paper with Final (Revised) Answer Key for the Post of

**Assistant Engineer  
(Mechanical)**

**held on 26-07-  
2018**

Itemcode : **AE1001**

**Q1:** Two forces P and Q are acting at an angle  $\alpha$ . The resultant force R acts at an angle of  $\theta$  with force P, then the value of  $\theta$  will be

<b>A</b>	$\tan^{-1} \frac{Q \cos \alpha}{P+Q \cos \alpha}$
<b>B</b>	$\tan^{-1} \frac{Q \sin \alpha}{P+Q \cos \alpha}$
<b>C</b>	$\tan^{-1} \frac{Q \cos \alpha}{P+Q \sin \alpha}$
<b>D</b>	$\tan^{-1} \frac{Q \sin \alpha}{P+Q \sin \alpha}$

Correct Ans: **B**

Itemcode : **AE1002**

**Q2:** The moment of the force about a point is equal to the algebraic sum of the component forces about the same point is known as

<b>A</b>	Tresca theory
<b>B</b>	Law of Parallelogram
<b>C</b>	Law of triangle
<b>D</b>	Varignon's theorem

Correct Ans: **D**

Itemcode : **AE1003**

**Q3:** Three forces P, Q, and R are acting concurrently. The included angles are  $\alpha$ ,  $\beta$ , and  $\gamma$ . According to Lami's theorem

<b>A</b>	$\frac{P}{\sin \alpha} = \frac{Q}{\sin \beta} = \frac{R}{\sin \gamma}$
<b>B</b>	$\frac{P}{\cos \alpha} = \frac{Q}{\cos \beta} = \frac{R}{\cos \gamma}$
<b>C</b>	$\frac{P}{\tan \alpha} = \frac{Q}{\tan \beta} = \frac{R}{\tan \gamma}$
<b>D</b>	$\frac{\sin \alpha}{P} = \frac{\sin \beta}{Q} = \frac{\sin \gamma}{R}$

Correct Ans: **A**

Itemcode : **AE1004**

**Q4:** If the angle of wrap in belt drive is  $\theta$  and the coefficient of friction between belt and pulley is  $\mu$ . (Where  $T_1$  and  $T_2$  are the tensions in the tight and slack side of the belt respectively.) Which one is true

<b>A</b>	$T_1 \cdot T_2 = e^{\mu \theta}$
<b>B</b>	$\frac{T_2}{T_1} = e^{\mu \theta}$
<b>C</b>	$T_1 - T_2 = e^{\mu \theta}$
<b>D</b>	

$$\frac{T_1}{T_2} = e^{i\theta}$$

Correct Ans: **D**

Itemcode : **AE1005**

**Q5:** The radius of a Mohr's circle represents

- A** Maximum normal stress
- B** Minimum normal stress
- C** Maximum shear stress
- D** Minimum shear stress

Correct Ans: **C**

Itemcode : **AE1006**

**Q6:** The minimum number of strain gauges in a strain rosette is

- A** one
- B** Two
- C** Three
- D** Four

Correct Ans: **C**

Itemcode : **AE1007**

**Q7:** Strain energy stored in a beam due to bending is given by  
(Where M is bending moment, E is modulus of elasticity, I is moment of inertia, G is modulus of rigidity, L is the length of the beam, and  $\sigma$  is the tensile strength.)

- A**  $\int \frac{M^2 dx}{2EI}$
- B**  $\int \frac{\sigma^2 dx}{2EI}$
- C**  $\int \frac{M^2 dx}{2GI}$
- D**  $\int \frac{M^2 dx}{2EL}$

Correct Ans: **A**

Itemcode : **AE1008**

**Q8:** The area under the stress-strain diagram up to the rupture point is known as

- A** Proof resilience
- B** Modulus of toughness
- C** Modulus of elasticity
- D** Modulus of resilience

Correct Ans: **B**

Itemcode : **AE1009**

**Q9:** A cantilever beam of length L is subjected to a uniformly distributed load W per unit length. The maximum bending moment will be equal to

- A**  $\frac{WL}{2}$
- B**  $\frac{WL^2}{2}$

<b>C</b>	$\frac{WL^2}{4}$
<b>D</b>	$\frac{WL^2}{8}$
Correct Ans: <b>B</b>	

Itemcode : <b>AE1010</b>	
<b>Q10:</b> The variation of bending stress in a curved beam is -----in nature.	
<b>A</b>	Linear
<b>B</b>	Cubic
<b>C</b>	Parabolic
<b>D</b>	Hyperbolic
Correct Ans: <b>D</b>	

Itemcode : <b>AE1011</b>	
<b>Q11:</b> Indenter used in Brinell Hardness test is	
<b>A</b>	Square base pyramid diamond
<b>B</b>	Rectangular based pyramid diamond
<b>C</b>	Sphere made of steel or tungsten carbide
<b>D</b>	Spero conical diamond
Correct Ans: <b>C</b>	

Itemcode : <b>AE1012</b>	
<b>Q12:</b> Atoms are arranged in face centered cubic (FCC) structure as	
<b>A</b>	All eight corners of the cube
<b>B</b>	All eight corners of the cube and one at the body center
<b>C</b>	All eight corners of the cube and at the center of each face
<b>D</b>	All eight corners of the cube and one at the body center with one at the center of each face
Correct Ans: <b>C</b>	

Itemcode : <b>AE1013</b>	
<b>Q13:</b> The maximum percentage of the carbon content in steels is	
<b>A</b>	1.2%
<b>B</b>	2%
<b>C</b>	4%
<b>D</b>	6.67%
Correct Ans: <b>B</b>	

Itemcode : <b>AE1014</b>	
<b>Q14:</b> Shrinkage allowance on the pattern is provided to take care of	
<b>A</b>	Liquid shrinkage
<b>B</b>	Solid shrinkage
<b>C</b>	Liquid and solid shrinkage
<b>D</b>	Any one, liquid or solid shrinkage
Correct Ans: <b>C</b>	

Itemcode : <b>AE1015</b>	
<b>Q15:</b> Decreasing the clay content in the moulding sand increases the	
<b>A</b>	Permeability
<b>B</b>	Refractoriness

<b>C</b>	Green strength
<b>D</b>	Flowability
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1016</b>	
<b>Q16:</b> Refractoriness of the moulding sand can be increased by	
<b>A</b>	Increasing the grain size
<b>B</b>	Decreasing the grain size
<b>C</b>	Increasing the water content
<b>D</b>	Increasing the clay content
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1017</b>	
<b>Q17:</b> Chills are used in the casting to	
<b>A</b>	Provide the support to the core
<b>B</b>	Improve the directional solidification
<b>C</b>	To cool the mould rapidly after casting
<b>D</b>	To connect the pouring basin and runner
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1018</b>	
<b>Q18:</b> Which of the following generally has square cross section	
<b>A</b>	Ingot
<b>B</b>	Bloom
<b>C</b>	Slab
<b>D</b>	Billet
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1019</b>	
<b>Q19:</b> Molten glass is used as lubricant in	
<b>A</b>	Rolling
<b>B</b>	Wire Drawing
<b>C</b>	Deep drawing
<b>D</b>	Forward hot extrusion
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1020</b>	
<b>Q20:</b> In the sheet metal operations shear stress is induced in	
<b>A</b>	Blanking
<b>B</b>	Punching
<b>C</b>	Trimming
<b>D</b>	All of the above
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1021</b>	
<b>Q21:</b> Polarity change is required in	
<b>A</b>	AC welding
<b>B</b>	DC Welding
<b>C</b>	Both AC and DC welding
<b>D</b>	Neither AC nor DC welding

Correct Ans: **B**

Itemcode : **AE1022**  
Q22: Consumable electrode is used in

<b>A</b>	Gas metal arc welding
<b>B</b>	Carbon arc welding
<b>C</b>	Resistance welding
<b>D</b>	Hydrogen gas welding

Correct Ans: **A**

Itemcode : **AE1023**  
Q23: Arc blow problem occurs in

<b>A</b>	Oxy-acetylene welding
<b>B</b>	AC welding
<b>C</b>	DC welding
<b>D</b>	Electron beam welding

Correct Ans: **C**

Itemcode : **AE1024**  
Q24: A flexible plastic bottle is manufactured by

<b>A</b>	Injection moulding
<b>B</b>	Thermoforming
<b>C</b>	Extrusion
<b>D</b>	Blow moulding

Correct Ans: **D**

Itemcode : **AE1025**  
Q25: The Merchant circle is used to

<b>A</b>	Improve the quality of a product
<b>B</b>	Find the principal stress and principal strain
<b>C</b>	Fix the price of a product in the market
<b>D</b>	Establish the shear angle relationship in machining

Correct Ans: **D**

Itemcode : **AE1026**  
Q26: The surface finish of a cylindrical hole is maintained by

<b>A</b>	Honing
<b>B</b>	Lapping
<b>C</b>	Internal cylindrical grinding
<b>D</b>	Boring

Correct Ans: **A**

Itemcode : **AE1027**  
Q27: In shaping process

<b>A</b>	Tool reciprocates and feed is given to job
<b>B</b>	Job reciprocates and feed is given to tool
<b>C</b>	Both tool and job reciprocate relative to each other
<b>D</b>	Both tool and job remain static.

Correct Ans: **A**

Itemcode : **AE1028**

<b>Q28:</b> Knurling operation is performed on	
<b>A</b>	Shaper machine
<b>B</b>	Milling machine
<b>C</b>	Grinding machine
<b>D</b>	Lathe machine
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1029</b>	
<b>Q29:</b> To produce involute profile of the gear on milling machine, which one is required	
<b>A</b>	Differential indexing head
<b>B</b>	Angle milling cutter
<b>C</b>	Slab milling cutter
<b>D</b>	Profile milling cutter
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1030</b>	
<b>Q30:</b> Which process is used to produce smooth drilled hole	
<b>A</b>	Drilling
<b>B</b>	Boring
<b>C</b>	Tapping
<b>D</b>	Reaming
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1031</b>	
<b>Q31:</b> A pick and place arm of a robot is	
<b>A</b>	The most flexible of all robots
<b>B</b>	An intelligent robot
<b>C</b>	Capable of point to point operation
<b>D</b>	Primarily used for large parts handling
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>AE1032</b>	
<b>Q32:</b> In an assembly line balancing, 4 tasks with time 15, 18, 13, 21 min are to be assigned on the different workstations for the cycle time 25 min. The theoretical and actual number of workstations required are	
<b>A</b>	3 and 4 respectively
<b>B</b>	4 and 5 respectively
<b>C</b>	3 and 5 respectively
<b>D</b>	2 and 3 respectively
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1033</b>	
<b>Q33:</b> Which layout is most suitable for highest flexibility	
<b>A</b>	Product layout
<b>B</b>	Process layout
<b>C</b>	Fixed position layout
<b>D</b>	Group layout
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1034</b>	
<b>Q34:</b> Delphi technique is used in	
<b>A</b>	Forecasting

<b>B</b>	Inventory management
<b>C</b>	Quality planning
<b>D</b>	Material handling
Correct Ans: <b>A</b>	

Itemcode : <b>AE1035</b>	
<b>Q35:</b> To meet the weekly fluctuating demand of the customer	
<b>A</b>	Material requirement planning can be used
<b>B</b>	Economic order quantity can be used
<b>C</b>	Aggregate production planning can be used
<b>D</b>	Master production schedule can be used
Correct Ans: <b>C</b>	

Itemcode : <b>AE1036</b>	
<b>Q36:</b> Just-in-Time concept was developed by	
<b>A</b>	Taiichi Ohno
<b>B</b>	Kiichito Toyoda
<b>C</b>	Eiji Toyoda
<b>D</b>	Demin
Correct Ans: <b>A</b>	

Itemcode : <b>AE1037</b>	
<b>Q37:</b> W. A. Shewart introduced the concept of	
<b>A</b>	Control chart
<b>B</b>	Travel chart
<b>C</b>	Sampling plan
<b>D</b>	Quality circle
Correct Ans: <b>A</b>	

Itemcode : <b>AE1038</b>	
<b>Q38:</b> Which one is used as control chart for variables	
<b>A</b>	X-bar and R chart
<b>B</b>	P- Chart
<b>C</b>	C- Chart
<b>D</b>	U-Chart
Correct Ans: <b>A</b>	

Itemcode : <b>AE1039</b>	
<b>Q39:</b> If the value of $\oint \frac{dQ}{T}$ is greater than zero, the nature of the thermodynamic cycle is	
<b>A</b>	Reversible
<b>B</b>	Irreversible
<b>C</b>	Both reversible and irreversible
<b>D</b>	Impossible
Correct Ans: <b>D</b>	

Itemcode : <b>AE1040</b>	
<b>Q40:</b> Specific heat at constant pressure can be given as (Where $\gamma$ is ratio of specific heats at constant pressure and constant volume, R is a gas constant, J is the Joule constant.)	
<b>A</b>	

	$\frac{\gamma R}{J(\gamma-1)}$
<b>B</b>	$\frac{JR}{\gamma(\gamma-1)}$
<b>C</b>	$\frac{\gamma R}{J(R-1)}$
<b>D</b>	$\frac{R}{J(\gamma-1)}$
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1041</b>	
<b>Q41:</b> Internal energy of a system containing perfect gas depends on	
<b>A</b>	Pressure only
<b>B</b>	Temperature only
<b>C</b>	Pressure and temperature
<b>D</b>	Pressure temperature and specific heat
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1042</b>	
<b>Q42:</b> Second law of thermodynamics is known as the law of	
<b>A</b>	Energy
<b>B</b>	Entropy
<b>C</b>	Enthalpy
<b>D</b>	Internal energy
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1043</b>	
<b>Q43:</b> Which of the following law governs the isothermal process	
<b>A</b>	Boyle's Law
<b>B</b>	Charle's law
<b>C</b>	Joule's law
<b>D</b>	Gay Lussac's law
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1044</b>	
<b>Q44:</b> Liquefied Petroleum Gas is a mixture of	
<b>A</b>	Propane and butane
<b>B</b>	Propane and ethane
<b>C</b>	Methane and isopropane
<b>D</b>	Butane and entane
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1045</b>	
<b>Q45:</b> Which of the following is not a renewable source of energy	
<b>A</b>	Solar energy
<b>B</b>	Wind energy
<b>C</b>	Natural gas
<b>D</b>	Tidal energy
Correct Ans: <b>C</b>	



Itemcode : <b>AE1046</b>	
<b>Q46:</b> Superheating of the steam is done at	
<b>A</b>	Constant temperature
<b>B</b>	Constant volume
<b>C</b>	Constant pressure
<b>D</b>	Constant entropy
Correct Ans: <b>C</b>	

Itemcode : <b>AE1047</b>	
<b>Q47:</b> To maximize the efficiency, the speed ratio in Parson's reaction turbine is	
<b>A</b>	$\frac{\cos \alpha}{2}$
<b>B</b>	$\frac{\cos^2 \alpha}{2}$
<b>C</b>	$\cos \alpha$
<b>D</b>	$\cos^2 \alpha$
Correct Ans: <b>C</b>	

Itemcode : <b>AE1048</b>	
<b>Q48:</b> Generally, which type of compressor is used in a gas turbine	
<b>A</b>	Reciprocating
<b>B</b>	Centrifugal
<b>C</b>	Axial flow
<b>D</b>	Lob type
Correct Ans: <b>C</b>	

Itemcode : <b>AE1049</b>	
<b>Q49:</b> Compression ratio in SI engine varies from	
<b>A</b>	6 to 10
<b>B</b>	10 to 14
<b>C</b>	14 to 22
<b>D</b>	22 to 32
Correct Ans: <b>A</b>	

Itemcode : <b>AE1050</b>	
<b>Q50:</b> Morse test is conducted on	
<b>A</b>	Single cylinder engine
<b>B</b>	Multi-cylinder engine
<b>C</b>	Steam engine
<b>D</b>	Gas turbine
Correct Ans: <b>B</b>	

Itemcode : <b>AE1051</b>	
<b>Q51:</b> The total heat radiation from a black body per second per unit area is proportional to (Where T is an absolute temperature.)	
<b>A</b>	$T^4$
<b>B</b>	$T^3$
<b>C</b>	$T^2$

<b>D</b>	$T$
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Correct Ans: **A**

Itemcode : **AE1052**  
**Q52:** If a Carnot cycle has a coefficient of performance 4, the ratio of maximum temperature to minimum temperature will be

<b>A</b>	0.25
<b>B</b>	1.25
<b>C</b>	5
<b>D</b>	3

Correct Ans: **B**

Itemcode : **AE1053**  
**Q53:** The nature of stress-strain plot for the Newtonian fluid is

<b>A</b>	Hyperbolic
<b>B</b>	Parabolic
<b>C</b>	Linear
<b>D</b>	Non-linear

Correct Ans: **C**

Itemcode : **AE1054**  
**Q54:** For the medium head of the water (24 – 180 m), which hydraulic turbine is best suited

<b>A</b>	Pelton turbine
<b>B</b>	Francis turbine
<b>C</b>	Kaplan Turbine
<b>D</b>	Any one

Correct Ans: **B**

Itemcode : **AE1055**  
**Q55:** How to avoid the cavitation in centrifugal pump

<b>A</b>	By lowering the suction pressure
<b>B</b>	By lowering the delivery pressure
<b>C</b>	By increasing the suction pressure
<b>D</b>	By increasing the delivery pressure

Correct Ans: **C**

Itemcode : **AE1056**  
**Q56:** Power need to drive the centrifugal pump is proportional to

<b>A</b>	$N$
<b>B</b>	$N^2$
<b>C</b>	$N^3$
<b>D</b>	$N^{3/2}$

Correct Ans: **C**

Itemcode : **AE1057**  
**Q57:** Euler's equation in the differential form can be expressed as  
 (Where  $dP$  is the pressure difference,  $\rho$  is the density of the fluid,  $v$  is the velocity,  $dz$  is the differential head,  $g$  is the gravitational acceleration.)

<b>A</b>	$\frac{P}{\rho} + \frac{v^2}{2} + gz = 0$
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<b>B</b>	$\frac{dP}{\rho} + vdv + gdz = 0$
<b>C</b>	$\frac{d\rho}{\rho} + vdv + gdz = 0$
<b>D</b>	$\frac{d\rho}{P} + vdv + gdz = 0$

Correct Ans: **B**

Itemcode : **AE1058**  
**Q58:** If  $\epsilon$  is the clearance ratio for a reciprocating compressor, the volumetric efficiency will be equal to

<b>A</b>	$1 - \epsilon \left( 1 + r^{\frac{1}{n}} \right)$
<b>B</b>	$1 + \epsilon \left( 1 - r^{\frac{1}{n}} \right)$
<b>C</b>	$1 + \epsilon \left( 1 - \frac{1}{r^{\frac{1}{n}}} \right)$
<b>D</b>	$1 - \epsilon \left( 1 - \frac{1}{r^{\frac{1}{n}}} \right)$

Correct Ans: **B**

Itemcode : **AE1059**  
**Q59:** In the axial flow compressor, the efficiency can be maximized by

<b>A</b>	Increasing the speed
<b>B</b>	Decreasing the speed
<b>C</b>	Maintaining the speed constant and moderate
<b>D</b>	None of these

Correct Ans: **A**

Itemcode : **AE1060**  
**Q60:** Poisson ratio is expressed as

<b>A</b>	Lateral stress/lateral strain
<b>B</b>	Longitudinal stress/ longitudinal strain
<b>C</b>	Lateral strain/ longitudinal strain
<b>D</b>	Lateral stress by longitudinal stress

Correct Ans: **C**

Itemcode : **AE1061**  
**Q61:** The value of poisson ratio for steel ranges from

<b>A</b>	0.25 to 0.33
<b>B</b>	0.33 to 0.5
<b>C</b>	0.5 to 0.8
<b>D</b>	0.8 to 1.2

Correct Ans: **A**

Itemcode : **AE1062**  
**Q62:**

If the helix and friction angles in a screw jack are given as $\alpha$ and $\phi$ respectively, the value of coefficient of friction, $\mu$ will be	
<b>A</b>	$\frac{\tan \alpha}{\tan(\alpha + \phi)}$
<b>B</b>	$\frac{\tan(\alpha + \phi)}{\tan \alpha}$
<b>C</b>	$\frac{\tan(\alpha - \phi)}{\tan(\alpha + \phi)}$
<b>D</b>	$\frac{\tan(\alpha + \phi)}{\tan(\alpha - \phi)}$
Correct Ans: <b>S</b> (S Denotes question scrapped and weight-age to all )	

Itemcode : <b>AE1063</b>	
<b>Q63:</b> Which of the following is the dead weight governor	
<b>A</b>	Porter Governor
<b>B</b>	Watt Governor
<b>C</b>	Hartung Governor
<b>D</b>	Hartnell Governor
Correct Ans: <b>A</b>	

Itemcode : <b>AE1064</b>	
<b>Q64:</b> Sensitiveness of the governor is defined as	
<b>A</b>	Ratio of difference between maximum and minimum speed to the mean speed
<b>B</b>	Ratio of mean speed to the difference between maximum and minimum speed
<b>C</b>	Ratio of sum of maximum and minimum speed to the difference between maximum and minimum speed
<b>D</b>	Ratio of the difference between maximum and minimum speed to the sum of maximum and minimum speed
Correct Ans: <b>A</b>	

Itemcode : <b>AE1065</b>	
<b>Q65:</b> The included angle in the V-belt drive ranges from	
<b>A</b>	15° to 30°
<b>B</b>	30° to 45°
<b>C</b>	45° to 60°
<b>D</b>	60° to 90°
Correct Ans: <b>B</b>	

Itemcode : <b>AE1066</b>	
<b>Q66:</b> The circle passing through the top of the teeth of a gear is known as	
<b>A</b>	Pitch circle
<b>B</b>	Addendum circle
<b>C</b>	Dedendum circle
<b>D</b>	Base circle
Correct Ans: <b>B</b>	

Itemcode : <b>AE1067</b>	
<b>Q67:</b> Which of the following is the weakest element in a flange coupling	
<b>A</b>	Bolt
<b>B</b>	Flange

<b>C</b>	Key
<b>D</b>	Shaft
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>AE1068</b>	
<b>Q68:</b> For a new clutch, the friction radius is equal to (Where D and d is the external and internal diameter respectively.)	
<b>A</b>	$\frac{1}{3} \frac{D^3 - d^3}{D^2 - d^2}$
<b>B</b>	$\frac{2}{3} \frac{D^3 - d^3}{D^2 - d^2}$
<b>C</b>	$\frac{D+d}{2}$
<b>D</b>	$\frac{D+d}{4}$
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1069</b>	
<b>Q69:</b> For a block brake, the equivalent coefficient of friction is (Where $2\theta$ is the angle of contact and $\mu$ is the coefficient of friction.)	
<b>A</b>	$\frac{2 \sin 2\theta}{2\theta + \sin 2\theta} \mu$
<b>B</b>	$\frac{4 \sin \theta}{2\theta + \sin 2\theta} \mu$
<b>C</b>	$\frac{4 \sin 2\theta}{2\theta + \sin 2\theta} \mu$
<b>D</b>	$\frac{2 \sin \theta}{2\theta + \sin 2\theta} \mu$
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1070</b>	
<b>Q70:</b> The relationship between the guage length (L) and the cross sectional area (A) of the test specimen in a tensile testing is given by	
<b>A</b>	$L = 5.65\sqrt{A}$
<b>B</b>	$A = 5.65\sqrt{L}$
<b>C</b>	$L = 8.65\sqrt{A}$
<b>D</b>	$A = 8.65\sqrt{L}$
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1071</b>	
<b>Q71:</b> Least count of a vernier calliper is	
<b>A</b>	Ratio of main scale to vernier scale
<b>B</b>	Ratio of vernier scale to main scale
<b>C</b>	Difference between one division of main scale and one division of vernier scale
<b>D</b>	Sum of main scale to the vernier scale
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>AE1072</b>	
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<b>Q72:</b> Sine bar is used to measure the	
<b>A</b>	Slope of the surface of a workpiece
<b>B</b>	Diameter of a job
<b>C</b>	Thickness of a job
<b>D</b>	Length of a job
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1073</b>	
<b>Q73:</b> An exact centering can be done on a lathe by	
<b>A</b>	Four jaw chuck
<b>B</b>	Three jaw chuck
<b>C</b>	Dog clutch
<b>D</b>	Face plate
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1074</b>	
<b>Q74:</b> The ratio of aluminium and iron oxide used in thermit welding is	
<b>A</b>	1:3
<b>B</b>	3:1
<b>C</b>	1:2
<b>D</b>	2:1
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1075</b>	
<b>Q75:</b> In a oxy-acetylene welding, the ratio of oxygen to acetylene in reducing flame is	
<b>A</b>	0.5:1
<b>B</b>	0.9:1
<b>C</b>	1:1.2
<b>D</b>	1:1.5
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1076</b>	
<b>Q76:</b> Seamless tube can be made by	
<b>A</b>	Rolling
<b>B</b>	Die forging
<b>C</b>	Piercing
<b>D</b>	Extrusion
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>AE1077</b>	
<b>Q77:</b> The tool material used in electro-discharge machining is	
<b>A</b>	Aluminium
<b>B</b>	Steel
<b>C</b>	Diamond
<b>D</b>	Copper or brass
Correct Ans: <b>D</b>	

<u>Itemcode</u> : <b>AE1078</b>	
<b>Q78:</b> The atmosphere required in the furnace for nitriding the steel component is of	
<b>A</b>	Liquid nitrogen

<b>B</b>	Nascent nitrogen
<b>C</b>	Ammonia
<b>D</b>	Graphite
Correct Ans: <b>C</b>	

Itemcode : <b>AE1079</b>	
<b>Q79:</b> Flame and induction hardening process is used for	
<b>A</b>	A big job
<b>B</b>	Small portion of a job
<b>C</b>	Deeper hardness of a job
<b>D</b>	Inner hardness of a job
Correct Ans: <b>B</b>	

Itemcode : <b>AE1080</b>	
<b>Q80:</b> Negative rake angle is used in	
<b>A</b>	High carbon steel tool
<b>B</b>	Ceramic tool
<b>C</b>	Super steel
<b>D</b>	Cubic boron nitride tool
Correct Ans: <b>B,D</b>	

Itemcode : <b>AE1081</b>	
<b>Q81:</b> How many reserved Assembly constituencies are there in Kangra District of H.P. ?	
<b>A</b>	Two
<b>B</b>	Three
<b>C</b>	Four
<b>D</b>	Five
Correct Ans: <b>B</b>	

Itemcode : <b>AE1082</b>	
<b>Q82:</b> Which mountain pass joins Lahaul and Spiti areas of H.P. ?	
<b>A</b>	Kunzam
<b>B</b>	Baralacha
<b>C</b>	Kugti
<b>D</b>	Padri
Correct Ans: <b>A</b>	

Itemcode : <b>AE1083</b>	
<b>Q83:</b> In which district of H.P. is Mahakali lake ?	
<b>A</b>	Kullu
<b>B</b>	Kinnaur
<b>C</b>	Lahaul - Spiti
<b>D</b>	Chamba
Correct Ans: <b>D</b>	

Itemcode : <b>AE1084</b>	
<b>Q84:</b> In which district of H.P. Dudhon Glacier ?	
<b>A</b>	Kangra
<b>B</b>	Kinnaur
<b>C</b>	Lahaul - Spiti

<b>D</b>	Kullu
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Correct Ans: **D**

<u>Itemcode</u> : <b>AE1085</b>	
<b>Q85:</b> Which one of the following temples is built in Pagoda style ?	
<b>A</b>	Hadimba (Manali)
<b>B</b>	Shakti Devi (Chhitrari)
<b>C</b>	Hateshwari (Hatkoti)
<b>D</b>	Lakshna Devi (Bharmour)

Correct Ans: **A**

<u>Itemcode</u> : <b>AE1086</b>	
<b>Q86:</b> Near which town of Shimla District is Sipi Fair celebrated in May ?	
<b>A</b>	Rohru
<b>B</b>	Chopal
<b>C</b>	Mashobra
<b>D</b>	Rampur

Correct Ans: **C**

<u>Itemcode</u> : <b>AE1087</b>	
<b>Q87:</b> Which NGO petitioned against unauthorised construction of Hotels including the one by H.P. Tourism Development Corporation ?	
<b>A</b>	KPA
<b>B</b>	SPOKE
<b>C</b>	NGT
<b>D</b>	INTACH

Correct Ans: **B**

<u>Itemcode</u> : <b>AE1088</b>	
<b>Q88:</b> When was the H.P. Territorial Council converted into Legislative Assembly ?	
<b>A</b>	1961
<b>B</b>	1962
<b>C</b>	1963
<b>D</b>	1964

Correct Ans: **C**

<u>Itemcode</u> : <b>AE1089</b>	
<b>Q89:</b> Near which town of H.P. is Baba Balku Museum ?	
<b>A</b>	Shah Talai
<b>B</b>	Badsar
<b>C</b>	Shimla
<b>D</b>	Solan

Correct Ans: **C**

<u>Itemcode</u> : <b>AE1090</b>	
<b>Q90:</b> Which Himachali is the author of novel Ramta Jogi ?	
<b>A</b>	Sunder Lohia
<b>B</b>	Yogeshwar Sharma
<b>C</b>	Om Prakash Sarawat
<b>D</b>	Hari Ram Jasta

Correct Ans: **D**



Itemcode : **AE1091**

**Q91:** From which Assembly constituency of Karnataka did K. Siddaramaiah contest during the 2018 Assembly Elections?

- |          |             |
|----------|-------------|
| <b>A</b> | Kanakpura   |
| <b>B</b> | Kollegal    |
| <b>C</b> | Badami      |
| <b>D</b> | Krishnaraja |

Correct Ans: **C**

Itemcode : **AE1092**

**Q92:** Which tunnel will provide connectivity between Srinagar, Kargil and Leh in J and K ?

- |          |                 |
|----------|-----------------|
| <b>A</b> | Jawahar tunnel  |
| <b>B</b> | Banihal tunnel  |
| <b>C</b> | Sonamarg tunnel |
| <b>D</b> | Zojila tunnel   |

Correct Ans: **D**

Itemcode : **AE1093**

**Q93:** Who holds the record of having climbed Mt. Everest 22 times ?

- |          |                     |
|----------|---------------------|
| <b>A</b> | Appa Sherpa         |
| <b>B</b> | Phurba Tashi Sherpa |
| <b>C</b> | Kami Rita Sherpa    |
| <b>D</b> | Tenzing Norgay      |

Correct Ans: **C**

Itemcode : **AE1094**

**Q94:** Who is the convener of National Compassion Committee for Eradication of Bonded Labour in India ?

- |          |                   |
|----------|-------------------|
| <b>A</b> | Medha Patekar     |
| <b>B</b> | Nirmala Deshpande |
| <b>C</b> | Nirmala Gorana    |
| <b>D</b> | Ira Pande         |

Correct Ans: **C**

Itemcode : **AE1095**

**Q95:** According to Swachh Sarvekshan 2018 which is the cleanest city in India ?

- |          |            |
|----------|------------|
| <b>A</b> | Bhopal     |
| <b>B</b> | Chandigarh |
| <b>C</b> | Pune       |
| <b>D</b> | Indore     |

Correct Ans: **D**

Itemcode : **AE1096**

**Q96:** Which country is hosting the fifth Asian Champions Trophy Women Hockey Tournament in May 2018 ?

- |          |             |
|----------|-------------|
| <b>A</b> | China       |
| <b>B</b> | Japan       |
| <b>C</b> | South Korea |
| <b>D</b> | Malaysia    |

Correct Ans: **C**

Itemcode : **AE1097**

**Q97:** Which day is observed as International Nurses Day ?

<b>A</b>	5th May
<b>B</b>	12th May
<b>C</b>	19th May
<b>D</b>	23rd May
Correct Ans: <b>B</b>	

<u>Itemcode</u> : <b>AE1098</b>	
<b>Q98:</b> Where are the headquarters of the Aga Khan Trust for culture which carried out the renovation of Qutab Shahi Tombs in Hyderabad ?	
<b>A</b>	Rome
<b>B</b>	Paris
<b>C</b>	Geneva
<b>D</b>	London
Correct Ans: <b>C</b>	

<u>Itemcode</u> : <b>AE1099</b>	
<b>Q99:</b> In which country is Kaaba, the inner shrine of mosque at Mecca ?	
<b>A</b>	Saudi Arabia
<b>B</b>	Kuwait
<b>C</b>	Dubai
<b>D</b>	Iraq
Correct Ans: <b>A</b>	

<u>Itemcode</u> : <b>AE1100</b>	
<b>Q100:</b> On the bank of which river is Budapest ?	
<b>A</b>	Seine
<b>B</b>	Danube
<b>C</b>	Tigris
<b>D</b>	Hudson
Correct Ans: <b>B</b>	