

Most Urgent/Out Today

F.No. 9-119/CE/PW/ES-II/2018/
अंडमान तथा निकोबार प्रशासन
ANDAMAN AND NICOBAR ADMINISTRATION
मुख्य अभियन्ता का कार्यालय
OFFICE OF THE CHIEF ENGINEER
अंडमान लोक निर्माण विभाग
ANDAMAN PUBLIC WORKS DEPARTMENT
निर्माण भवन NIRMAN BHAWAN

Port Blair, dated the 08th July, 2019

Notice

The Limited Departmental Competitive written Examination to the post of Junior Engineer (Civil) and Junior Engineer (Electrical & Mechanical) under promotion category of APWD was conducted on 06.07.2019 at DBRAIT. Altogether 11 candidates [03 candidates for the post of Junior Engineer (Civil) and 08 candidates for the post of Junior Engineer (Electrical & Mechanical)] have appeared in the above said examination.

To ensure the fairness and transparent recruitment process, the answer key and question booklet are uploaded in the departmental website www.apwd.and.nic.in. today the 08th July, 2019. Claims and objection, if any in this regards can be submitted by email to ceapwd@and.nic.in. up to 03:00 P.M. on 11.07.2019.


EO TO Chief Engineer

1. The Executive Engineer [E&M](Plg-I), CE's Office, A.P.W.D., Port Blair for uploading in the departmental website of APWD.
2. The Superintending Engineer, CC-I, APWD, P/ Blair.
3. The Executive Engineer, SAD, APWD, P/Blair.
4. The Executive Engineer, PBND, APWD, P/Blair.
5. The Executive Engineer, Store Division, APWD, P/ Blair.
6. The Executive Engineer, Work Shop Division, APWD, P/Blair.
7. The Executive Engineer, CD-I, APWD, P/ Blair.
8. The Executive Engineer, E&M, APWD, P/Pur.
9. The Executive Engineer, RCD, APWD, W/Gunj.
10. The Executive Engineer, CD-I, APWD, Rangat.


EO TO Chief Engineer

Recruitment Examination under Limited Departmental Competitive Examination (LDCE) for the post of Junior Engineer under APWD, Andaman & Nicobar Administration

Answer key for Electrical & Mechanical Engineering

Q.No	Answer	Q.No	Answer	Q.No	Answer	Q.No	Answer
1.	a	26.	d	51.	c	76.	b
2.	a	27.	b	52.	a	77.	b
3.	a	28.	c	53.	b	78.	d
4.	c	29.	b	54.	d	79.	d
5.	a	30.	a	55.	c	80.	c
6.	b	31.	a	56.	d	81.	d
7.	a	32.	a	57.	b	82.	a
8.	b	33.	d	58.	c	83.	d
9.	a	34.	b	59.	d	84.	d
10.	a	35.	d	60.	b	85.	d
11.	d	36.	a	61.	a	86.	d
12.	c	37.	d	62.	a	87.	d
13.	d	38.	d	63.	b	88.	d
14.	b	39.	d	64.	a	89.	d
15.	c	40.	b	65.	c	90.	d
16.	b	41.	a	66.	c	91.	d
17.	d	42.	b	67.	b	92.	b
18.	b	43.	b	68.	c	93.	d
19.	b	44.	c	69.	c	94.	b
20.	d	45.	d	70.	a	95.	a
21.	c	46.	d	71.	a	96.	b
22.	b	47.	a	72.	a	97.	c
23.	c	48.	a	73.	b	98.	c
24.	a	49.	c	74.	c	99.	a
25.	b	50.	c	75.	b	100.	d

Recruitment Examination under Limited Departmental Competitive Examination (LDCE) for the post of Junior Engineer under APWD, Andaman & Nicobar Administration

Answer key for Civil Engineering

Q.No	Answer	Q.No	Answer	Q.No	Answer	Q.No	Answer
1.	b	26.	b	51.	d	76.	b
2.	a	27.	a	52.	b	77.	a
3.	d	28.	b	53.	c	78.	a
4.	b	29.	c	54.	a	79.	b
5.	b	30.	c	55.	d	80.	d
6.	d	31.	b	56.	b	81.	a
7.	a	32.	c	57.	c	82.	d
8.	b	33.	a	58.	b	83.	
9.	d	34.	d	59.	c	84.	
10.	c	35.	a	60.	a	85.	
11.	c	36.	b	61.	b	86.	
12.	d	37.	d	62.	a	87.	
13.	a	38.	a	63.	d	88.	
14.	d	39.	c	64.	c	89.	
15.	b	40.	d	65.	d	90.	
16.	b	41.	b	66.	c	91.	
17.	a	42.	c	67.	a	92.	
18.	a	43.	a	68.	b	93.	
19.	a	44.	a	69.	c	94.	
20.	b	45.	d	70.	b	95.	
21.	c	46.	c	71.	a	96.	
22.	a	47.	b	72.	c	97.	
23.	c	48.	c	73.	b	98.	
24.	a	49.	d	74.	b	99.	
25.	d	50.	c	75.	d	100.	a

**Recruitment Examination Under Limited Departmental Competitive Examination (LDCE)
For The Post Of Junior Engineer Under Apwd, A&N Administration**

Sub: Civil Engineering
Time: 2 Hrs

Date: 06/07/2019
Maximum Marks:200

Q.No	Question
1	The chemical properties of materials does not describe a) Corrosion Characteristics b) Permeability c) Combining Tendencies d) Solubility
2	Construction of building exposed to high wind blowing particles will use a) Granite b) Lime Stone c) Marble d) Slate
3	Stone used for electrical switched boards a) Gneiss b) Granite c) Basalt d) Marble
4	The test on stones which indicates the presences of earthy matter is known as a) Crystallization Test b) Smith's Test c) Microscopic Test d) Crushing Test
5	A stone which is free from calcium carbonate can resist a) Water b) Fire c) Efflorescence d) Acid
6	A well-seasoned timber may contain moisture up to a) 4 to 6% b) 6 to 8% c) 8 to 10% d) 10 to 12%
7	----- test is carried out to determine the rate of wear of stones employed for construction of roads a) Attrition Test b) Acid Test c) Impact Test d) Crushing Test
8	Asbestos is a and proof natural fibrous mineral substance of different colors a) Moisture and Chemical b) Acid and Fire c) Heat and Moisture d) Sound and Heat

9	Which of the following is not a constituent of an oil paint? a) White Lead b) Linseed Oil c) Lamp Black d) Calcium Carbonate
10	The timber available in a living tree is known as a) Green Timber b) Rough Timber c) Standing Timber d) Structural Timber
11	The increased cohesiveness of concrete makes it a) More prone to Bleeding b) More prone to Segregate c) Less prone to Segregate d) More prone to Surface Scaling
12	Bulking of sand is a) Mixing of different sizes of sand particles b) Mixing of lime with sand c) Mixing of water with sand d) Swelling of sand when wetted
13	Concrete is unsuitable for compaction by vibrator, if it is a) Plastic b) Dry c) Semi-plastic d) Earth-moist
14	After casting, an ordinary cement concrete on drying will a) Bulge b) Expand c) Crack d) Shrink
15	Which of the following is not done by the admixture? a) Imparting Strength b) Accelerating the hydration process c) Making concrete Water proof d) Making concrete acid proof
16	High temperature will a) Increase the Strength of Concrete b) Decrease the Strength of Concrete c) No effect on Strength d) Harden the concrete
17 concrete is rarely used in hot weather condition a) Air-entrained concrete b) Pre-packed concrete c) Vacuum Concrete d) Vacuum Dewatered Concrete
18	Slump test of concrete is measure of its a) Consistency b) Compressive strength c) Tensile strength d) Impact value

19	For quality control of Portland cement, the essentially done is a) Setting Time b) Smith's Test c) Rockwell Test d) Toughness Test
20	Setting time of cement decreases by adding a) Hydrogen Peroxide b) Gypsum c) Calcium Chloride d) Sodium Oxide
21	Profile leveling is usually done for determining a) Contour of an area b) Reservoir capacity c) Elevation along a Straight line d) Boundaries
22	The fundamental principles of surveying states a) Two reference points are required to locate a point b) Work from part to whole c) Have one control point d) Use of control points should be avoided
23	Determining the difference in elevation between two points on the surface of earth is known as a) Leveling b) Simple leveling c) Differential leveling d) Longitudinal leveling
24	A relatively fixed point of known elevation above datum is called a) Benchmark b) Datum Point c) Reduced Level d) Reference Point
25	Contours of different elevations may cross each other only in the case of a) Vertical Cliff b) Saddle c) Inclined Plane d) Over Hanging Cliff
26	Deviation of the actual road gradient from the proposed contour gradient uphill side involves a) Embankment on the centerline b) Excavation on the centerline c) Earthwork on the centerline d) Both embankment and excavation
27	Sharpness of the curve is designated by its a) Radius and degree of curvature b) Length and point of curve c) Point of tangency d) Long chord
28	The bearing of a line is the horizontal angle which it makes with the magnetic meridian passing through one of the extremities of the line a) True b) Magnetic c) Arbitrary d) Whole Circle

29	When a tachometer is fitted with an anallatic lense a) Additive constant is 100 and multiplying constant is zero b) Both additive constant and multiplying constant are 100 c) Multiplying constant is 100 and additive constant is zero d) Both additive constant and multiplying constant are 50
30	Tilt of the staff in stadia tachometry increases the intercept if it is a) Away from the telescope pointing downhill b) Towards the telescope pointing uphill c) Away from the telescope pointing uphill d) Towards from the telescope pointing downhill
31	Accurate determination of water content is made by a) Sand bath method b) Oven drying method c) Calcium carbide method d) Alcohol method
32 soils has been deposited by gravity a) Sand dunes b) Glaciofluvial c) Talus d) Out wash
33	The liquid limit and plastic limit exists in a) Clayey soil b) Sandy soil c) Silty soil d) Coarse soil
34	Black cotton soil are of high plasticity a) Laterite b) Basalt c) Loess d) Clay
35	The shear strength of a soil is it's to shear stresses just before the failure a) Maximum Resistance b) Resistance c) Resistivity d) Yield
36	Shear failure of a soil mass occurs a) When the shear stresses induced due to applied compressive load does not exceed the shear strength of the soil b) When the shear stresses induced due to applied compressive load exceeds the shear strength of the soil c) When the shear stresses induced due to applied compressive load is same as the shear strength of the soil d) When there is tensile stress
37	The ratio of volume of water present in a given soil mass to the total volume of its voids is known as a) Void ratio b) Porosity c) Percentage void d) Degree of saturation

38	In soil engineering the regain of strength of the soil with passage of time after it has been remoulded is called a) Thixotropy b) Consistency c) Bulking of sand d) Flakiness
39	A pycnometer is used to determine a) Void ratio b) Dry Density c) Water content d) Density index
40	The fraction of soil smaller than size is referred to as fines a) 40 microns b) 4.75 mm c) 2.0 mm d) 75 microns
41	At yield point of a test piece, the material a) Obey's Hooke's law b) Regains it's original shape on removal of the load c) Behaves in an elastic manner d) Undergoes plastic deformation
42	The maximum bending moment for a simply supported beam with a UDL of w per unit length is a) $wl/2$ b) $wl^2/4$ c) $wl^2/8$ d) $wl^2/12$
43	The point of contraflexure is the point where a) Bending Moment changes sign b) Bending Moment is maximum c) Bending Moment in minimum d) Shear Force is zero
44	Stress may be expressed in a) N/mm^2 b) N/cm^2 c) N/m^2 d) KN/m^2
45	A material is said to be perfectly elastic if a) It regains it's original shape on partial removal of the load b) It regains it's original shape partially on removal of the load c) It does not regain it's original shape on removal of the load d) It regains it's original shape on removal of the load
46	The ratio of lateral strain to axial strain of a homogenous material is a) Yield ratio b) Hook's ratio c) Poisson's ratio d) Plastic ratio
47	The units of Moment of Inertia of a plane area depends upon a) Unit of area b) Units of area and length c) Unit of length d) Unit of center of gravity

48	Moment of Inertia of any plane area may be found out by a) Method of differentiation b) Routh's rule c) Method of integration and Routh's rule d) Method of partial differentiation
49	Beams composed of more than one material, rigidly connected together so as to behave as one piece are known as a) Compound Beam b) Indeterminate beam c) Determinate Beams d) Composite Beams
50	The maximum deflection due to a load 'W' at the free end of a cantilever of length 'L' and having flexural rigidity 'EI' is a) $WL^2/2EI$ b) $WL^2/3EI$ c) $WL^3/3EI$ d) $WL^3/2EI$
51	Spacing of the stirrups in a rectangular beam is a) Kept constant throughout the length b) Decreased towards the center of the beam c) Increased at the ends d) Increased at the center of the beam
52	As the percentage of steel increases a) Depth of the neutral axis decreases b) Depth of the neutral axis increases c) Lever arm increases d) Lever arm decreases
53	Columns may be made of plain concrete if their unsupported lengths do not exceed their least lateral dimensions a) Two times b) Three times c) Four times d) Five times
54	A T-beam behaves as a rectangular beam of a width equal to its flange if it's neutral axis a) Remains within the flange b) Remains below the slab c) Coincides with the geometrical centre of the beam d) Out of the flange
55	Sections, in which the tension steel reaches yield strain simultaneously as the concrete reaches the failure strain in bending are a) Singly reinforced sections b) Doubly reinforced sections c) Over reinforced sections d) Balanced sections
56	As per ISI rolled steel beam sections are classified into a) Two series b) Five series c) Four series d) Three series

57	The rivets which are heated and then driven in the field are known as a) Power driven shop rivets b) Hand driven rivets c) Power driven field rivets d) Cold driven rivets
58	The gross diameter of a rivet is the diameter of a) Cold rivet before driving b) Rivet after driving c) Rivet hole d) Rivet before driving
59	When two plates are placed end to end and are joined by two cover plates, the joint is known as a) Lap joint b) Butt joint c) Double cover butt joint d) Chain riveted lap joint
60	If $n = (2-3)$ then the frame is called a) Perfect frame b) Deficient frame c) Redundant frame d) Imperfect frame
61	Liquids a) Cannot be compressed b) Do not have definite shape c) Not effected by pressure d) Not effected by temperature
62	Specific weight of water is a) 1000 kg/m ³ b) 1000 kg/mm ³ c) 1000 g/m ³ d) 100 kg/m ³
63	Water belongs to a) Non-Newtonian fluid b) Compressible fluid c) Real fluid d) Newtonian fluid
64	Falling drops of water becomes spheres due to a) Adhesion b) Cohesion c) Surface Tension d) Viscosity
65	In an open tube free surface of mercury remains a) Horizontal b) Curved upward c) Elliptical d) Curved downward
66	Barometers are used to measure a) Pressure in water channels b) Difference in pressure at two points c) Atmospheric pressure d) Very high pressure

77	The coagulant which is generally not used for treating the sewage is	<ul style="list-style-type: none"> a) Alum b) Ferric oxide c) Ferric sulphate d) Chlorinated copperas
78	The maximum depth of sedimentation tank is kept	<ul style="list-style-type: none"> a) 3 meter b) 3.5 meter c) 4 meter d) 4.5 meter
79	In areas where light rains are uniformly distributed throughout the year the type of sewerage system to be adopted is	<ul style="list-style-type: none"> a) Separate system b) Combined system c) Partially combined system d) Partially separate system
80	Sewer manholes are generally provided at	<ul style="list-style-type: none"> a) Change of gradient b) Junction of sewers c) Change of direction d) Change of gradient, direction and junction of sewer
81	The is negotiated in the horizontal curve by	<ul style="list-style-type: none"> a) Centrifugal force, super elevation b) Centrifuge, cant c) Center of gravity, bank d) Cohesive force, gradient
82	The of aggregate is determined by impact test	<ul style="list-style-type: none"> a) Hardness b) Strength c) Durability d) Toughness
83	The bitumen whose viscosity is reduced by adding volatile diluent is	<ul style="list-style-type: none"> a) Emulsion b) Cutback c) Tar d) asphalt
84	The actual minimum distance along the road visible to the driver to avoid head on collision	<ul style="list-style-type: none"> a) Stopping sight distance b) Overtaking sight distance c) Transverse sight distance d) Super elevated sight distance
85	The points through which the road alignment should and should not pass is known as	<ul style="list-style-type: none"> a) Rotary points b) Tee points c) Obligatory points d) Object points
86	The quality of traffic as perceived by the user is known as	<ul style="list-style-type: none"> a) Level of road b) Level of service c) Level of sight d) Level of driving

67	Piezometers are used to measure	<ul style="list-style-type: none"> a) Very low pressure b) Pressure in pipes c) Difference in pressure d) Absolute pressure
68	Manning's formula is used for	<ul style="list-style-type: none"> a) Flow in open channel b) Head loss due to friction in open channels c) Head loss due to friction in pipes flowing full d) Flow in pipes
69	The length of hydraulic jump is roughly	<ul style="list-style-type: none"> a) 2 to 3 times its height b) 3 to 5 times its height c) 5 to 7 times its height d) 7 to 9 times its height
70	Orificemeter is used to measure	<ul style="list-style-type: none"> a) Pressure at the point b) Discharge c) Average speed d) velocity
71	Per capita demand of water is calculated in litres	<ul style="list-style-type: none"> a) per person per day b) per person per month c) per person per year d) per person per week
72	Average domestic consumption of water under normal conditions in any Indian city is	<ul style="list-style-type: none"> a) 105 lpcd b) 115 lpcd c) 135 lpcd d) 130 lpcd
73	The water which is taste full for drinking and aesthetically pure is	<ul style="list-style-type: none"> a) Potable water b) Palatable water c) Wholesome water d) Polluted water
74	Most of the colour of the water is due to impurities	<ul style="list-style-type: none"> a) Suspended b) Colloidal c) Dissolved d) Volatile
75	Odour in water is affected due to the presences of	<ul style="list-style-type: none"> a) Manganese b) Iron c) pH value d) Dissolved gases
76	The sewer which transports the sewage to the point of treatment is known as	<ul style="list-style-type: none"> a) House sewer b) Outfall sewer c) Branch sewer d) Lateral sewer

96	The width of the entrance of harbor is restricted to	<ul style="list-style-type: none"> a) 100 meter b) 125 meter c) 150 meter d) 180 meter
97	A low wall built into the sea perpendicular to the coast line to resist travel of sand and stingle along a beach	<ul style="list-style-type: none"> a) Breakwater b) Breakwall c) Groins d) Shorewall
98	Which of the following shape of docks and basins is generally not adopted	<ul style="list-style-type: none"> a) Rectangular ways b) Diamond guays c) Inclined guays d) Circular guays
99	Floating mooring does not require	<ul style="list-style-type: none"> a) Cables b) Anchors c) Bollard d) buoy
100	The portion of the ship which is below the water level that is decisive for wharf	<ul style="list-style-type: none"> a) draft b) ballast c) hatch d) deck

87	No entry, one way are Signs	<ul style="list-style-type: none"> a) Stop sign b) Prohibitory sign c) Compulsory sign d) Restriction sign
88	The intersection where all converging vehicle are forced to move around a central island in one direction before weaving out	<ul style="list-style-type: none"> a) Channel intersection b) Rotary intersection c) Divisional intersection d) Island intersection
89	When a down gradient meets another down gradient the it forms one of the	<ul style="list-style-type: none"> a) Valley curve b) Valenine curve c) Summit curve d) Submission curve
90	The types of transition curve does not include	<ul style="list-style-type: none"> a) Cubic spiral b) Cubic parabolic c) Lemniscate d) Compound curve
91	The imaginary area where the plane loses and gain altitude near airport is known as	<ul style="list-style-type: none"> a) Approach area b) Windward area c) Wayward area d) Head wind area
92	The diagram used for orientation of runway	<ul style="list-style-type: none"> a) Approach diagram b) Windrose diagram c) Wind diagram d) Airrose diagram
93	For night landing the threshold are lighted	<ul style="list-style-type: none"> a) Green b) Red c) White d) Yellow
94	According to ICAO all markings on the runways are painted white and on taxiways	<ul style="list-style-type: none"> a) Black b) Red c) Yellow d) green
95	The length of runway is increased per 300 m rise above MSL	<ul style="list-style-type: none"> a) 3 percent b) 4 percent c) 6 percent d) 7 percent

DO NOT OPEN THE SEAL OF THE BOOKLET UNTIL YOU ARE ASKED TO DO SO

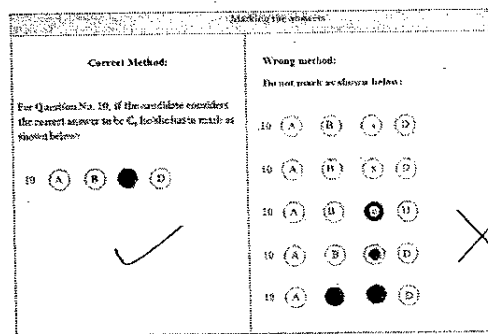
Time Allowed: 2 Hours

Maximum Marks: 200

Read the following instruction carefully before you begin to answer the question. This booklet contains questions in English Only.

INSTRUCTIONS TO CANDIDATE FOR THE POST OF JE (E & M) under LDCE of APWD

1. Every candidate is required to satisfy that the Question Paper Booklet given to him / her contains the number of pages as printed on the cover page of the booklet. In case of any discrepancy, he/she should ask for replacement of the Question Paper Booklet immediately.
2. **Negative marking** There is no Negative Marking.
3. The Question Paper Booklet **will consist of 100 Multiple Choice Questions (MCQ's)** and for every question, four answer options designated as A, B, C and D are given in the Question Paper Booklet. Each Question carries 2 marks. The candidate is required to select one amongst the options corresponding to the question as his/her right answer and darken the circle i.e. A or B or C or D as the case may be, to be the answer in the OMR Answer Sheet with blue/black ball point pen only.
Example:



4. The OMR Answer Sheet contains the serial number of questions as given in the Question Paper Booklet. Against each question number, there are four circles marked as A, B, C, and D which correspond to the four answer options of which one is to be darkened on the OMR Answer Sheet only. No marking should be done on the Question Paper Booklet.
5. Candidates are required to sign in the OMR Answer Sheets and Attendance Sheet in the same manner as they have signed in their application form and Admit Card.
6. The candidate must write his/her Roll Number, as allotted to him/her and printed in the Admit Card, on OMR Answer Sheet in boxes and darken appropriate circles with Blue/Black Ball Point Pen. The candidate should not write his/her name, Registration Number and also not to make noting/scribbling on the Answer Sheet and Question Paper Booklet except in the space provided for rough work. In case any candidate fills in the information wrongly, the Institute will not take any responsibility of rectifying the mistake. The Question Paper Booklet Code as darkened by the candidate will be final and the result will be processed on the basis of the circle darkened by him/her.
7. Candidates should not open the single pin on the right side of the Question Paper Booklet before the time specified for the commencement of the examination.
8. Multiple darkened circles for a question will be treated as wrong answer. For question/s not answered i.e. blanks, no marks will be given or deducted.
9. Candidate should not change /erase / overwrite on the options while answering the questions in the event of any such act zero marks shall be given for the said question. Use of white/correction fluid, eraser, blade, etc. is not allowed on the OMR Answer Sheet.
10. The candidate will be required to submit the OMR Answer Sheet at the conclusion of each session of examination against acknowledgement by the Invigilator on the admit card.
11. Candidates must submit the Question booklet along with the filled OMR sheet to the invigilator before leaving the Examination hall
12. No candidates will be allowed to leave the examination hall during the conduct of examination

*****All the best*****

**Recruitment Examination under Limited Departmental Competitive Examination
(LDCE) for the post of Junior Engineer under APWD, Andaman & Nicobar
Administration**

Sub: Electrical & Mechanical (E&M) Engineering

Date: 06/07/2019

Time: 2 Hrs

Max Marks: 200 (100 x 2)

Q.No	Questions
1.	Superposition Theorem is applicable to a) linear bilateral networks b) non-linear networks c) linear unilateral networks d) none of these
2.	For a given line voltage, four heating coils will produce maximum heat when connected a) all in parallel b) all in series c) with two parallel pairs in series d) one pair in parallel with the other two in series
3.	A constant voltage is applied between the ends of a metallic wire of uniform area of cross section. The heat is doubled if a) both length and radius are doubled b) both length and radius are halved c) the radius of wire is doubled d) the length of wire is doubled
4.	A circuit has inductance of 2 H. if the circuit current changes at the rate of 10 A/sec then self-induced emf is a) 5 V b) 0.2 V c) 20 V d) 10 V
5.	Controlling torque in a measuring instrument increases a) with increase in deflecting torque b) with decrease in deflecting torque c) remains constant d) with increase in damping torque
6.	Shunts are used for extension of range of a) M.I ammeters b) PMMC ammeters c) MI Voltmeters d) Dynamo meter type voltmeters
7.	Between no load and full load which motor develops the least torque a) series b) shunt c) cumulative compound d) differential compound
8.	During short-circuit test, the iron loss of a transformer is negligible because a) the entire input is just sufficient to meet copper losses only b) flux produced is a small fraction of the normal flux c) iron core becomes fully saturated d) supply frequency remains constant

9.	<p>If starting winding of a single phase induction motor is left in the circuit, it will</p> <ul style="list-style-type: none"> a) draw excessive current and overheat b) run slower c) run faster d) spark at light loads
10.	<p>Arc resistance in circuit breakers</p> <ul style="list-style-type: none"> a) increases with length of arc b) decreases with length of arc c) remains same d) none of the above
11.	<p>The time-current characteristics of a fuse is</p> <ul style="list-style-type: none"> a) linear b) sinusoidal c) parabolic d) inverse
12.	<p>In sub-stations the most commonly used type of lightning arrester is</p> <ul style="list-style-type: none"> a) horn gap b) rod gap c) thyrite d) expulsion type
13.	<p>During resistance welding, heat produced at the joint is proportional to</p> <ul style="list-style-type: none"> a) current b) voltage c) kVA d) I^2R
14.	<p>In a photoconductive cell, the resistance of the semiconductor material varies _____ with the intensity of incident light</p> <ul style="list-style-type: none"> a) directly b) inversely c) exponentially d) logarithmically
15.	<p>A solar cell operates on the principle of</p> <ul style="list-style-type: none"> a) diffusion b) recombination c) photovoltaic action d) carrier flow
16.	<p>During the charging of a lead-acid cell</p> <ul style="list-style-type: none"> a) its cathode becomes dark brown in colour b) its voltage increases c) it gives out energy d) specific gravity of H_2SO_4 is decreased
17.	<p>Trickle charging of a storage battery helps to</p> <ul style="list-style-type: none"> a) prevent sulphation b) maintain proper electrolyte level c) increase its reserve capacity d) keep it fully charged
18.	<p>A voltage source can be converted to current source by</p> <ul style="list-style-type: none"> a) adding resistance in series b) adding resistance in parallel c) adding resistance in both series and parallel d) none of the above
19.	<p>The total energy of a revolving electron in an atom can</p> <ul style="list-style-type: none"> a) have any value above zero b) never be positive c) never be negative d) not be calculated

20.	<p>The principle methods of electron emission are</p> <ol style="list-style-type: none"> Thermionic and secondary emission Field and secondary emission Thermionic and photoelectric emission b and c both
21.	<p>Depending upon the type of emitter, the temperature used for thermionic emission varies between</p> <ol style="list-style-type: none"> 0-200 K 100-800 K 1050-2600 K 3000-6000K
22.	<p>The common emitter amplifier circuits are preferred over common base amplifier circuits because they have</p> <ol style="list-style-type: none"> lower amplification factor larger amplification factor high input resistance and low output resistance none of the above
23.	<p>The most commonly used transistor circuit arrangement is</p> <ol style="list-style-type: none"> common base common collector common emitter none of the above
24.	<p>The ripple factor of a power supply is a measure of</p> <ol style="list-style-type: none"> its filter efficiency its voltage regulation diode rating purity of power output
25.	<p>In a Zener diode shunt voltage regulator, the diode regulates as long as it is kept in</p> <ol style="list-style-type: none"> forward condition reverse condition loaded condition unloaded condition
26.	<p>The essential elements of an electronic instrument are</p> <ol style="list-style-type: none"> transducers signal conditioner indicating device all of the above
27.	<p>A vacuum tube voltmeter (VTVM) produces negligible loading effect on a circuit under test primarily because</p> <ol style="list-style-type: none"> it virtually no current from the circuit of its very high internal resistance it uses high vacuum tubes it is null deflection instrument
28.	<p>To obtain n-type semiconductor the impurity added to a pure semiconductor is</p> <ol style="list-style-type: none"> trivalent tetravalent pentavalent none of the above
29.	<p>The most widely used semiconductor material used in electronic devices is</p> <ol style="list-style-type: none"> germanium silicon carbon selenium

30.	A Zener diode is operated in a) breakdown region b) forward characteristic region c) both and b d) none of the above
31.	In a half-wave rectifier, the load current flows a) only for the positive half cycle of the input signal b) for less than half cycle of the input signal c) for more than half cycle of the input signal d) for whole cycle of the input signal
32.	A transistor is operated as a non-saturated switch to eliminate a) storage time b) turn-off time c) turn-on time d) delay time
33.	Electronic switches are more popular than mechanical switches because a) of its high speed b) of absence of sparking c) of noiseless operation d) all of the above
34.	FETs have similar properties to a) PNP transistors b) NPN transistors c) thermionic valves d) unijunction transistors
35.	A FET consists of a a) source b) drain c) gate d) all of the above
36.	After firing an SCR, the gate pulse is removed. The current in the SCR will a) remain the same b) immediately fall to zero c) rise up d) rise a little and then fall to zero
37.	An SCR may be turned OFF by a) interrupting its anode current b) reversing polarity of its anode-cathode voltage c) low current drop out d) all of the above
38.	A TRIAC behaves like two a) diodes in series b) four layers diodes in parallel c) resistors and one diode d) inverse parallel connected SCRs with common gate
39.	A TRIAC can be triggered into conduction by a) only positive voltage at either anode b) positive or negative voltage at either anode c) positive or negative voltage at gate d) both b and c
40.	A UJT has a) anode, cathode and a gate b) two bases and one emitter c) two anodes and one gate d) anode, cathode and two gates

41.	If the length of a cable is doubled, its capacitance is a) doubled b) halved c) tripled d) quadrupled
42.	The minimum dielectric stress in a cable is at a) conductor surface b) lead sheath c) core d) armour
43.	Illumination at a point is a) directly proportional to square of distance between source and surface b) inversely proportional to square of distance between source and surface c) directly proportional to distance between source and surface d) inversely proportional to distance between source and surface
44.	For differential protection 3-phase transformers, numbers of CTs used is a) 2 b) 4 c) 6 d) 8
45.	The main requirement of a good heating element used in a resistance furnaces is a) high resistivity b) high melting temperature c) positive resistance-temperature coefficient d) all of the above
46.	The specific resistance of a wire depends upon its a) length b) cross-sectional area c) dimensions d) material
47.	A special purpose diode which uses metals like gold, silver or platinum on one side of the junction, n-type doped silicon on another side and has almost no charge storage in the junction, is a a) Schottky diode b) Tunnel diode c) Varactor diode d) Zener diode
48.	When a pn junction is forward biased a) it offers low resistance and a large current flows through it b) it offers high resistance and a small current flows through it c) it acts as an insulator and no current flows through it d) the width of depletion layer increases
49.	The term giga byte refers to a) 1024 bytes b) 1024 kilo bytes c) 1024 mega bytes d) 1024 terra byte
50.	EPROM can be used for a) erasing the contents of ROM b) reconstructing the contents of ROM c) erasing and reconstructing the contents of ROM d) duplicating ROM

51.	A reverse Carnot cycle has a COP of 4. The ratio of higher temperature to lower temperature will be a) 1.5 b) 2.0 c) 1.25 d) 2.5
52.	Heat is rejected by the refrigerant during vapour compression refrigeration cycle in a) Condenser b) Evaporator c) Throttle Valve d) Compressor
53.	Thermostat in a window air conditioning unit controls a) Return air temperature b) Supply air temperature c) Condenser temperature d) Room temperature
54.	Split air conditioner is normally a) Water cooled compressor b) Air cooled compressor c) Water cooled condenser d) Air cooled condenser
55.	Freon group of refrigerants are being replaced due to a) Increase COP b) Global warming c) Ozone depletion d) None of these
56.	During indirect evaporating cooling process a) Humidity ratio remains constant b) Dew point temperature remains constant c) Partial pressure of evaporator remains constant d) All of the above are true
57.	The flow in a pipe whose valve is being opened or closed gradually is an example of a) Steady flow b) Unsteady flow c) Rotational flow d) Compressible flow
58.	The energy loss in a pipe line is due to a) Surface roughness only b) Viscous action only c) Friction offered by pipe wall as well as by viscous function d) None of the above
59.	Which of the following types of impeller is used for centrifugal pumps dealing with mud a) One side shrouded b) Two sides shrouded c) Double section d) Open
60.	To cast symmetrical object which of the following casting methods is used a) Die casting b) True centrifugal casting c) Investment casting d) None of the above

61.	A twist drill is specified by its Shank, Material and a) Diameter b) Lip angle c) Size of flute d) Length of body
62.	In case of a shaper, the ram should move a) Faster during return stroke b) Slower during return stroke c) All the same speed during return stroke d) None of the above
63.	The front wheel drive as compared to rear wheel drive a) Requires longer propeller shaft b) Gives better riding performance c) Has a greater skidding tendency d) Provides increased tractive effort when going up steep gradients
64.	_____ is a part of vehicle which holds the passengers and the cargo to be transported a) Hull b) Cabin c) Chassis d) Aft
65.	To drive from the gear box to the rear axle is taken by a) Clutch b) Universal joint c) Propeller shaft d) Differential gear
66.	The driving wheels of a vehicle is carried by a) Crank and slider b) Crankshaft c) Axles d) Propeller shaft
67.	What is the efficiency of a mechanical brake a) 25-35 % b) 60-70 % c) 90-95 % d) 100 %
68.	What will happen if there is no King pin offset a) Braking effort will be high b) Starting steering effort will be zero c) Starting steering effort will be high d) Wobbling of wheel will increase
69.	The brake bleeding system serves to free the system from a) Excess pressure b) Excess fluid c) Air d) None of the above
70.	Tread distortion is least on a) Radial ply tyres b) Cross ply tyres c) Cross ply belted tyres d) None of these
71.	Heel & Toe wear in tyres are caused by a) Excessive acceleration and braking b) Over inflation c) Under inflation d) Excessive camber

72.	Which types of springs are widely used for suspension in light and heavy commercial vehicles a) Semi-elliptical leaf spring b) Tapered leaf spring c) Coil spring d) None of the above
73.	A shackle with a leaf spring a) Prevents squeaking sound b) Allows the spring length to change c) Provide good traction d) Allows pivoting of spring end
74.	The compression ratio for a petrol engine varies from a) 25-40 b) 10-15 c) 6-10 d) 15-25
75.	The process of removing the burnt gas in IC engine from the combustion chamber of the engine cylinder is known as a) Supercharging b) Scavenging c) Polymerization d) Detonation
76.	In a four stroke cycle petrol engine, the process which starts at 40° after bottom dead centre and ends at 30° before top dead centre is known as a) . Expansion b) Compression c) Exhaust valve d) Inlet valve
77.	The most commonly used lubrication system for transportable high power vehicle is a) Splash b) Pressure system c) Gravity method d) None of these
78.	The main function of adding additives in lubrication is to a) Increase density b) Increase pour point c) Reduce flash point d) Inhibit oxidation
79.	By which of the following method diesel smoke can be reduced a) Adherence to proper fuel specification b) Using additives in the fuel c) Avoidance of overloading d) All of the above
80.	In petrol engine, ----- gas gets exhausted out without burning and without transformation: a) CO b) CO ₂ c) Nitrogen d) O ₂
81.	In reciprocating compressor, when air is compressed in more than one cylinder, it is known as a) Double acting b) Single acting c) Single stage d) Multistage

82.	Roots blower is a compressor which is also named as a) Positive displacement rotary compressor b) Radial flow dynamic compressor c) Axial flow compressor d) Positive displacement reciprocating compressor
83.	The common method of controlling the air delivered by the compressor is a) Blow off control b) Clearance control c) Throttle control d) All of the above
84.	The peak in corrosion rate of martensite occurs when a) In untempered condition b) Tempered at 800 °C c) Tempered at about 400 °C d) In spheroidized state
85.	Pore-free coating is required when a) Coating is noble with respect to the protected metal b) Coating is base with respect to the protected metal c) Coating has the same potential as the protecting metal d) None of these
86.	CNG is used extensively in a) Diesel engines b) Petrol engines c) Kerosene engines d) None of the above
87.	Bio fuel can be produced from a) Industrial waste b) Agriculture waste c) Domestic waste d) All of the above
88.	The society of Automotive Engineers(SAE) has classified lubricants according to a) Pour point b) Viscosity c) Flash point d) Cleanliness
89.	The assignable cause of variation of dimensions of any product is due to a) Tool wear b) Tool setting c) Tool getting loose d) All of the above
90.	Grade "00" slip gauge is used a) For checking gap of gauges b) For high precision work c) For setting up machine tools d) None of the above
91.	The types of solid lubricant in use are a) Graphite b) Molybdenum disulphite c) Silicon d) All of the above
92.	For workman, for interpreting of standing orders, can refer to a) Management b) Labour court c) Shop supervisor d) Trade union

93.	In no-frost refrigerator, evaporator is a) Not defrosted b) Defrosted by pressing button c) Defrosted by switching off refrigerator d) Defrosted automatically by heater at regular interval
94.	Refrigerant enters in the condenser in a vapour compressor unit is a) Wet b) Superheated c) Subcooled d) None of the above
95.	When a ductile material is loaded in excess of a certain value, a gradual increase in length takes place with time, the phenomena is known as a) Creep b) Fatigue c) Stress concentration d) Overstress
96.	The ratio of normal stress of each face of a solid cube to volumetric strain is called a) Poisson's ratio b) Bulk modulus c) Modulus of rigidity d) Modulus of elasticity
97.	Which of the following characterizes the dispersion of the results obtained in a series of measurements of the same value of a quantity measured a) Absolute error b) Relative error c) Root mean square deviation d) Uncertainty of measurement
98.	The process of producing a thin layer of zinc on the metal is known as a) Sherardizing b) Perkerizing c) Galvanizing d) Terne Coating
99.	To clean the surface of robust parts the method preferred is a) Tumbling b) Abrasive blasting c) Chemical cleaning d) none of the above
100.	The efficiency of screw jack for a given value of angle of friction a) depends upon the weight lifted only b) depends upon the effort applied only c) depends upon weight and efforts only d) independent of weight lifted or effort applied