भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
दक्षिण मध्य रेलवे SOUTH CENTRAL RAILWAY
मंडल कार्यालय, कार्मिक शाखा, विजयवाडा
Divisional Office, Personnel Branch, Vijayawada-520 001.

No.SCR/P-BZA/209/2-Tr.D/JE/TRD/(25%)PQ/Vol.VII दिनांक Dt:12.12.2023

Sr.DEE/Tr.D/BZA

Sub: Selection to the post of 'Junior Engineer/TRD' in Level-6 in Electrical (Tr.D) Department against 25% Promotion quota – Vijayawada Division.
Ref:- This office's notification issued under letter of even no.dt.23.11.2023.

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Further to this office's notification issued under letter cited above the following employees are alerted in the order of seniority, to be in readiness to appear for the written examination for the post of Junior Engineer/TRD against 25% Promotional quota in level-6, the date and venue will be advised shortly.

S.No.	Name of the employee S/Sri	Desig./Station	PF. No.	Com	Remarks
1	A. Ravi	Sr.Tec/OHE/NLR	24409328804	ST	
2	G. Appa Rao	Sr.Tech/OHE/VAT	24409328634	UR	
3	Sk. Khaja Saheb	Sr.Tech/PSIKCC	24409334312	UR	
4	K. Vasantha Rao	Sr.Tech/OHE/KCC	24409336436	ST	
5	K. Janardhan	Sr.Tech/PSI/NLR	24409328774	ST	
6	T.V.V.N. Murthy	Sr.Tech/PSI/AKP	24403324163	UR	
7	D. Ananda Babu	Sr.Tech/OHE/BZA	24409329018	SC	
8	Tolaram Meena	Sr.Tech/CPD/Jaipur	2441G060562	ST	
9	M. Rama Krishna	Sr.Tech/PSI/BPP	24409334520	UR	

The selection will be finalized as per the rules of IREM and guide lines issued by the Railway board.

The revised syllabus (Annexure-A) for the above selection is enclosed herewith. The same may be circulated to the staff concerned. In connection with the selection to the post of Junior Engineer/TRD in level-6 in Electrical (Tr.D) Department against 25% Promotional quota of Vijayawada division, the question bank is placed in S.C.Railway official website of scr.indianrailways.gov.in →About US →Divisions →Vijayawada →Personnel Brach →CLICK HERE → Notification and OO → Click on Question Bank for the post of Junior Engineer/TRD in level-6 against 25% Promotional quota.

In view of the above, the employees who have been alerted for the above selection vide letters cited may be advised to download the same for the purpose of above selection. The copy of the letter should be displayed on notice board at a conspicuous place. All the supervisory concerned should ensure the same.

The other terms & conditions indicated in original notification issued under letter cited under reference is stands good.

Encl. Revised Syllabus & Objective type Question bank.

(K.Srinivasa Rao) APO/M&EL
for Sr.Divisional Personnel Officer/BZA

C/-:PCPO/SC; CEDE/SC; SDGM/Vig./SC, Dy.CEE/RE/Jaipur for kind information.
C/-All ADEE's of TRD wing of BZA division for information.
C/-All Supervisory Officials of Electrical(Tr.D) department of BZA division;
C/-Employees through Supervisory Officials;
C/-Ch.OS/Conf.Section for information.
C/-OS/IT Cell for uploading in website.
C/-DSs of SCRE Sangh, SCRM Union, Al SC/ST Rly., Employees Assn & OBC Rly.,Employees Assn.,

Annexure-A

SOUTH CENTRAL RAILWAY
VIJAYAWADA DIVISION

SYLLABUS TO THE POST OF JUNIOR ENGINEER IN TRD ORGANISATION against 25% Promotional Quota

PART-A TECHNICAL SYLLUBUS of TRACTION DISTRIBUTION

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I. OHE Wing :

i) General Supply and feeding arrangements – Sectioning arrangements, basic principles of sectioning.
ii) Determination of copper section – Sag – tension in conductors – Temperature effects – Span lengths. Wing pressure – Blow off stagger – factors affecting the stagger.
iii) OHE in curved tracks – versine – super elevation – limitations.
iv) Schedule of dimensions – Basic principles of checking the OHE lay out plans – Survey pre-sagging plans.
v) Types of overlaps – Jumpers – Droppers etc.,
vi) Regulations OHE – Advantages – Anti creep – limitations for tension lines – mechanical advantage – X, Y measurements pulley block type and winch type ATDs.
vii) Type of wiring in turn outs – crossovers, separation of turn out OHE from mainline OHE, Section insulators erection assembly details – adjustments.
viii) Types of OHE termination and anchoring – types of neutral section and their usage.
ix) Different types of supports – Masts, portals, TTUs – Loading of masts
x) Electrical clearances – Horizontal, vertical for long time duration and short time duration. Workman safety – Discharge rod application, Over dimensional consignments, precautions pertaining to movements of ODCs in electrified area.
xi) Attention towards breakdowns – accidents, relief train/Tower Car particulars, wiring train composition, movements of tower car, online failure of tower car, caution orders etc.,
xii) Types of power blocks, emergency, local, shadow, pre-arranged, longitudinal protection, cross protection, dead section entry of locomotives.
xiii) Bonding, earthing of structures – bonding and earthing code.
xiv) Employment schedules – Foundation charts – Pegging plans – layout plans –Dropper schedules – SEDs – Tensioning charts, Erection of OHE – marking of foundation, Mast Erection, SPS erection, Cantilever erection and adjustments, ABCD dimensions, pre-commissioning test before energisation
xv) OHE material – conductors – Tin bronze fittings – aluminium bronze fittings – Insulators – stores collection and inspection and testing.
xvi) Duties of TPC – Maintenance of log sheets – control charts – blocks – issue of PTW – cancellation – localizing the faults – emergency manning of posts – coordination with other departments.
xvii) OHE maintenance – importance of foot petrol – schedule as per ACTM – accidents – breakdowns – panto entanglements – thefts – restoration – registers to be maintained – pollution and special checks – joint investigation with other departments – contact wire wear & tear and current collection tests- Oliver 'G' – Analysis of failures (A & B category) – Thermo vision check – Netra Car.

Contd 2

xviii) Protection of ladder trolley on track – Types of fire extinguishers and their applications – Competency certificates.

xix) G&SR relating to tower car movement – station working rules – safe working clearances as per IE rules/act.

xx) Various types of tower cars – their operation, maintenance and common failures.

xxi) Power Line Crossings – Rules and Regulations.

II) <u>PSI Wing</u> :

i) Schematic arrangements of traction sub-stations – Spacing between two sub-stations – Traction Transformers details, various types of control posts – equipment details, circuit breakers – Interrupters and their working.

ii) Earthing of Sub-Stations – Importance of buries rail & earth grid.

iii) Protective arrangements for feeders – for transformers against lightening, various types of relays like Electro Magnetic, Static and Numerical Type with their merits and demerits – details of testing.

iv) Current transformers – potential transformers – LT auxiliary transformers – Transformer oil – properties and collection of oil samples – filtration – switch gear oil etc.,

v) Maximum demand – contract demands – load factors – tariff etc.,

vi) Measuring and Testing instruments like Primary injection Kit, BDV test kit, relay testing kit, Power transformer bushing/oil tan-delta test kit, CB analyser, third harmonic leakage current (THRC) testing kit etc.,

vii) Power Factor and its significance.

viii) Scheduled maintenance of Power Transformers, CB's, BM's, CT's and PT's, capacitor Banks, Lightening arrestors and Battery sets. (Conventional and VRLA)

III. <u>Remote Control Equipments</u> :

i) Remote control equipments in use of Indian Railways – different components of SRC equipment – Telecommands and telesignals – Display of indications of Mimic panel – power block – measuring instruments used in RC maintenance, schedules of RC equipments – Technique of soldering – working of SCADA, operation and maintenance, specifications.

ii) Protective relay setting calculations of Feeder CB, Capacitor bank and Power Transformer.

IV. Special Maintenance instruction, TI and MI pertaining to OHE, PSI and RC.

Contd -3

PART-B : GENERAL ELECTRICAL ENGINEERING

A) Basics of electricity

1) Study of Electricity, Ohms Law, Magnetism, Electromagnetic induction, Flemings R.H. Rule, L.H. Rule, Lenz's Law, self-inductance, Mutual inductance, Study of AC circuits i.e., RL, RC, RLC Circuits, Series Resonance, Parallel resonance.

B) Transformers:

Study of Transformers and concept of Mutual induction. Step down, Step Up transformers, Auto transformers, Current transformers and Potential Transformers.

C) Importance of Earthing and Earth testing procedure:

Why earthing is to be done, PIPE earthing, Plate earthing, Maintenance free earthing. Study of Earth testing procedure, insulation test for various equipments and testing of insulators.

D) MCBs, Contactors, Fuses, selection of rating of MCBs, contactor, fuses based on current rating.

E) Electrical Safety and ACTS and Rules.

1. Electricity act and safe rules and Shock treatment, first aid and use of Fire Extinguishers.

PART –C: ESTABLISHMENT MATTERS and OFFICIAL LANAGAUGE POLICY AND RULES (for MULTIPLE CHOICE QUESTIONS GO THROUGH ON YOUR OWN PREPARATION)

1. Establisment matters i.e., Leave Rules, Railway service conduct rules, Pass rules, D&A rules, Hours of employment regulations.

2. OFFICIAL LANGAUAGE POLCIY and RULES: Rules and regulations about Official Language i.e., Hindi as Official Language. Knowledge on Hindi language.

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Divisional Office, Personnel Branch, Vijayawada-520 001.

No.SCR/P-BZA/209/2-Tr.D/JE/TRD/(25%PQ)/Vol.VII दिनांक Dt:23.11.2023

Sr.DEE/Tr.D/BZA

NOTIFICATION-JE/TRD-25%PQ

Sub: Selection to the post of 'JE-TRD' in Level-6 in Elect.,(Tr.D) department against 25% Promotion quota – Vijayawada Division.

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It is proposed to form a panel by holding a selection for the post of Junior Engineer/TRD in level-6 against 25% Promotional Quota in Electrical (Tr.D) Department of BZA division. Total assessed vacancies are 03 with the communal break up of **SC-Nil, ST-Nil & UR-03.** Detailed field of eligible employees, Syllabus, terms and conditions on holding written examination and formation of panel are as under.

The following employees in the ratio of 1:3 in the order of seniority are alerted to be in readiness to appear for the written examination for which the date and venue will be advised shortly.

S.No.	Name of the employee S/Sri	Desig,/Station	PF. No.	Com	Remarks
1	A. Ravi	Sr.Tec/OHE/NLR	24409328804	ST	
2	Ch. Srinivasa Rao	Sr.Tech/PSI/KCC	24409328506	UR	
3	G. Appa Rao	Sr.Tech/OHE/VAT	24409328634	UR	
4	Sk. Khaja Saheb	Sr.Tech/PSIKCC	24409334312	UR	
5	K. Vasantha Rao	Sr.Tech/OHE/KCC	24409336436	ST	
6	K. Janardhan	Sr.Tech/PSI/NLR	24409328774	ST	
7	T.V.V.N. Murthy	Sr.Tech/PSI/AKP	24403324163	UR	
8	K. Ch. Venkaiah	Sr.Tech /CON/BZA	24409334488	SC	
9	D. Ananda Babu	Sr.Tech/OHE/BZA	24409329018	SC	

STAND BY LIST

1	Tolaram Meena	Sr.Tech/Cor/Jaipur	244IG060562	ST	
2	M. Rama Krishna	Sr.Tech/PSI/BPP	24409334520	UR	
3	Y. Subbarayudu	Sr.Tech/PSI/KCC	24409329870	SC	
4	Abdul Rahmat Hussain	Sr.Tech/OHE/KCC	24409334518	UR	
5	K. Ramana Babu	Sr.Tech/OHE /TUNI	24409324150	UR	
6	S.A. Sajeed	Sr.Tech/OHE /KVZ	24409334592	UR	
7	L.F. Abraham	Sr.Tech/PSI/KCC	24409334713	UR	
8	K.K. Chakravarthy	Sr.Tech/OHE /BPP	24409334737	UR	
9	B. Sridhar	Sr.Tech/OHE /SLO	24409335079	UR	

The staff concerned should be notified and clear acknowledgment obtained by the supervisors. If any of the above employees expresses his unwillingness to appear for the examination, the same should be obtained in writing and should be forwarded to this office on **or before 30.11.2023.** Unwillingness letters received after the due date should not be accepted. If any of the employee is on sick/leave or absent, he should be notified at their residential address and acknowledgement obtained and the same forwarded to this office immediately. It may be made clear to the employees alerted as stand bye that they will be required to attend the examination only to the extent of unwillingness submitted by the employees in the zone of suitability within the prescribed date.

23/11/2023

As per Rly Boards Lr.No.E(NG)I/2020/PM1/41 dated 20.08.2003(CPO/SC SC.No.144/2004) professional ability of the employees in the field of selection will be adjudged through written test. All the employees must secure 60% of marks in professional ability(written) As well as in the aggregate for final empanelment. The post of Junior Engineer /TRD being a safety category post, there will be no relaxation in qualifying marks for candidates belonging to SC/ST community. They have to obtain minimum of 60% in written test &60% in aggregate (Ref: Para 10.1.1 of SC.No.320/1999).

The syllabus (Annexure-A) for the above selection is enclosed herewith. The same may be circulated to the staff concerned.

Question bank on the subject selection is being circulated separately and there will notbe any mandatory limit of question the question bank. Question bank is only indicative in nature but not examinees are advised to update their knowledge with latest rules/policies.

In terms of Railway Board's Lr. No.E(NG)I-2018/PM1/4, dt.14.12.2018 & 14.11.2019 communication by PCPO/SC's S.C.No.212/2018 &159/2019, the written examination consists of 100% objective type and there will be no negative marking in written examination for this selection.

In terms of CPO/SC's S.CNo.47/96, questions on official language will form part of the professional ability for 10% of total marks. The questions on official language policy are compulsory but there shall not be any compulsion on the part of the candidate to answer such questions.

The controlling officer/ Supervisory official has to ensure that the question bank is circulated to all the eligible staff and postponement of selection due to non-circulation of question banks will be view seriously.

If the employee placed on select list for promotion to the post of Jr.Engineer/TRD, he has to pass in prescribed medical examination of Aye - three as per para 517of IRMM.

Encl : As above.

(K.Srinivasa Rao) APO/M&EL,
for Sr.Divisional Personnel Officer/BZA
Vijayawada

Copy to :PCPO/SC; CEDE/SC; SDGM/Vig./SC, Dy.CEE/Con/BZA, CAO/CORE/PRYJ/Jalpur for kind information.
" :All ADEE's of TRD wing of BZA division for information.
" :All Supervisory Officials of Electrical(Tr.D) department of BZA division;
" :Employees through Supervisory Officials;
" :Ch.OS/Conf.Section for information;
" :OS/IT Cell for uploading in website.
" :DSs of SCRE Sangh, SCRM Union, AI SC/ST Rly., Employees Assn & OBC Rly.,Employees Assn.,

QUESTION BANK
FOR
The post of
JUNIOR ENGINEER/TRD
Against 25%
PROMOTIONAL QUOTA

TRD/BZA

VIJAYAWADA DIVISION

SOUTH CENTRAL RAILWAY

PART-A

OBJECTIVE –QUESTIONS BANK - TRD(MODEL QUESTION BANK BEING ENLCOSED. IT IS INDICATIVE IN NATURE)

S.no	Objective Questions	ANS.
1	What are standard ,Permanent and temporary clearances from 25KV live OHE respectively? A.50cm,25cm,20cmB.30cm,25cm,15cm C. 60cm,30cm,20cm D.100cm,50cm,30cm	A
2	Minimum distance for placing signal before and after PTFE in Traffic direction? A. 400m,250m B.500m,300m C. 400m200m D.350m,250m	C
3	Minimum distance to be maintained for placing OHE mast before and after signal? A.30m,10m B.25m,15m C.35m,25m D.50m,30m	A
4	What are minimum ground clearance to be maintained for 25KV,132KV,220KV lines? A.3.5m,4.7,5.5m B.4.0m, 5.5m,7.0m C.3.8m,4.6m,5.5m D.3.0m,4.0m,5.50m	C
5	What is maximum acidity value of Transformer oil? A.0.7mg of KOH/gm of oil B.0.mg of KOH/gm of oil C. .0.5mg of KOH/gm of oil D.0.4mg of KOH/gm of oil	C
6	What is the minimum BDV gap to be maintained in BDV KIT? A.2.5mm B.3.0mm C.3.5mm D.4.0mm	A
7	What is the battery capacity of Battery bank of TSS,SP/SSPTower car? A.200AH,40AH,180AH B.250AH,50AH,150AH C.300AH,150AH,200AH D.150AH,30AH,100AH	A
8	What is auto closing time of CB? A.1 sec B.2 sec C.0.5 sec D.3 sec	C
9	What is the maximum speed permitted on Tramway OHE? A.100KMPH B.120KMPH C.80KMPH D.60KMPH	C
10	What are the dimensions of N type upright? A.450mmx450mm B.500mmx500mm C.600mmx600mm D.400mmx400mm	A
11	What are the dimensions of O type upright? A.450mmx450mm B.550mmx550mm C.600mmx600mm D.400mmx400mm	B
12	What are the dimensions of N type upright? A.450mmx450mm B.500mmx500mm C.600mmx600mm D.400mmx400mm	C
13	What are minimum dimensions to call consignment as ODC(length,width,corner height,center height, top width respectively)? A.13m,3m,2m,3m,1m B.13.7m,2.97m,2.1m,2.7m,0.6m C.14m,4m,3m,4m,2m D.15m,3m,4m,2m,1.5m	B
14	What is the minimum clearance from fixed structures for A class ODC? A.9 inches B.8 inches C.6 inches D.10 inches	A
15	what is the minimum implantation on main line and in yards? A. 2.35m, 2.30m B.2.36m, 2.31m C.2.37m, 2.25m D.2.36m,2.21m	D
16	What is the range of TS for obligatory mast? A.100mm to700mm B.120mm to 650mm C.150mm to 700mm D.200mm to800mm	C
17	what is the minimum embedded portion of OHE mast in foundation? A.1.45m B.1.35m C.1.40m D.1.30m	B
18	What is formula of Versine?(l-length of span,R-Radius of curvature) A.l^2/6R B.l^2/7R C.L^2/8R D.L^2/10R	C
19	What is maximum stagger at S.I location? A.200mm B.100mm C.150mm D.250mm	B
20	What is min value of TC for S.I with runners facing turnout location? A.1.65m B.1.75m C.1.5m D.1.85m	A
'21	What is range of Take on/Take off to be maintained for turnout location? A. 600mm to 700mm B. 650mm to 720mm C.600mm to 750mm D.650mm to 750mm	B
22	What is the standard distance of G jumper from mast? A.5.0m B.5.6m C.6.0m D.5.5m	B

23	What is maximum OHE span with Section Insulator? A.45m B.63m C.54m D.72m	C
24	What is maximum span of OHE with LC gate? A.54.0m B.45m C.63m D.58.5m	D
25	What is the material of operating pole? A. PlasticB.Synthetic resin bonded glass fiber C.PoercelainD. Plastic synthetic	B
26	What is the minimum distance for signal to be placed before IOL? A.120m B.100m C.150m D.200m	A
27	What is the cross section of large span copper wire? A.120sq.mm B.130sq.mm C.140sq.mm D.150sq.mm	B
28	What is standard distance between two I.R bonds? A.250m B.300m C.200m D.350m	D
29	What is the LA rating on LV side (25KV)? A.40KV B.35KV C.42KV D>25KV	C
30	What is LA rating on 132KV? A.132KV B.120KV C.140KV D.100KV	B
31	What is the color change of silica gel crystals after absorbing moisture? A.Blue to Pink B.Blue to White C.Blue to yellow D.Blue to orange	A
32	What is pre sag of conventional regulated OHE? A.50mm B.100mm C.150mm D.200mm	B
33	What is the minimum contact wire height at LC gate? A.5.6m B.5.5m C.5.4m D.5.3m	B
34	What is the LA rating of 220KV LA? A.200KV B.220KV C.198KV D.210KV	C
35	What is the equipment to measure tension? A.ThermometerB.tension meter C.Hydrometer D. Dynamometer	D
36	Equipment used to measureSpecific gravity? A.ThermometerB.HydrometerC.HygrometerD.Specific gravity meter	B
37	What is the working clearance near OHE? A.3m B.2.5m C.4.0m D.2.0m	D
38	What is maximum CER of TSS? A.0.5ohm B.1.0ohm C.1.5ohm D.2.0ohm	A
39	What is the maximum CER of SSP/SP? A.2.5ohm B.2.0ohm C.0.5ohm D.3.0ohm	B
40	What is the gradient of contact wire to be maintained? A.4mm/m B.5mm/m C.3mm/m D.6mm/m	C
41	What is mechanical advantage of 3 pulley regulating ATD?(load:effort) A.4:1 B.5:1 C.3:1 D. 3.5:1	C
42	What is the tension for Anticreep wire? A.1500kgf B.1200Kgf C.1000kgf D.2000kgf	C

43	What is the size of N type upright? A.10.21m B.10.50m C.10.51m D.11.0m	C
44	What is the length of R type upright? A.10.5m B.10.6m C.10.7m D.10.66m	D
45	What is the minimum cross section of Earth rod cable? A.30sq.mm B.35sq.mm C.40sq.mm D.45sq.mm	C
46	What is the minimum distance between two OHE in IOL? A.200mm B.300mm C.400mm D.500mm	D
47	Standard distance of F jumper from mast in IOL? A.2.0m B.3.0m C.2.5m D.5.6m	C
48	What is the minimum height difference between Turnout OHE and Main line OHE at Turnout? A.4cm B.5cm C.6 cm D.7cm	B
49	What is the condemnable thickness of carbon strip on panto? A.2mm B.4mm C.5mm D.1mm	A
50	What is pressure to be exerted by panto on OHE? A.6kg/cm2 B.6.5kg/cm2 C.6.kg/cm2 D.7kg/cm2	D
51	What is the minimum horizontal distance of Power line crossing Tower from OHE? (H-Height of Tower) A.H+10m B.H+7m C.H+8m D.H+6m	D
52	What is the minimum deviation permitted for Power line crossing over OHE? A.30 B.45° C.50° D.35°	A
53	What is the minimum implantation for mast on PF? A.4.5m B.5.0m C.5.5m D.4.75m	D
54	Expand RDSO? A. Research Drawing and steel organization B.Research Designs and standards organization C. Railway Development and survey organization D. none of the above	B
55	Minimum separation between two earth pits? A.5m B.6m C.3m D.7m	B
56	What is CT ratio on 25KV side? A.1000/500/5A B.1200/600/5A C.1500/750/5A D.1300/650/5A	C
57	What is drop out fuse rating of AT? A.0.5A B.2.0A C.1.5A D.1A	D
58	What is voltage rating of Type I PT? A.25KV/100V B.25KV/120V C.25KV/110V D.25KV/105V	A
59	What is voltage rating of Type II PT? A.25KV/100V B.25KV/120V C.25KV/110V D.25KV/105V	C
60	What is the fixed length of dropper? A.120mm B.105mm C.100mm D.120mm	B

61	What is the tension to be maintained for Tramway OHE? A.1000kgf B.1200kgf C.1300kgf D.1250kgf	D
62	What is the authority for Tower car to enter into block section and return to same station? A.T/965 B.T/1708 C.T/1350 D.T/1425	B
63	What is the minimum overlapping span in UIOL? A.63m B.54m C.67.5m D.58.5m	B
64	What is minimum overlapping span in IOL? A.63m B.54m C.58.5m D.72m	C
65	What is competency given for PSI supervisor? A.TR-6 B.TR-3 C.TR-4 D.TR-7	A
66	Which of the following is not property of SF6 gas? A.High BDV B.Flammable C.Non Toxic D.Good arc quenching properties	B
67	What is the standard specific gravity of electrolyte in Battery cells at 27°? A.1250 B.1215 C.1230 D.1200	B
68	With increase in temperature what is the effect on specific gravity value? A.decreases B.increases C.remains same D.showsAbnormalbehavior	A
69	what is the terminal connector used for 160sq.mm copper jumper? A.1010 B.1009 C.1008 D.1011	B
70	What is the encumbrance of main line OHE at Turnout location? A.1.4m B.0.8m C.0.9m D.1.0m	C
71	What is the standard distance of A dropper from Mast centre? A.2.5m B.2.25m C.3.0m D.1.5m	B
72	What is the maximum difference between two adjacent spans? A.27m B.22.5m C.18m D.36m	C
73	What is the condemning dia of contact wire on main line? A.8.5mm B.9mm C.9.5mm D..25mm	D
74	What is the dia of contact wire? A.12.24mm B.13mm C.12.5mm D.11.5mm	A
75	What is the dia of catenary wire? A.10mm B.12.24mm C.10.54mm D.12.1mm	C
76	Whatis standard, alarm,trip values of Gas density of SF6 gas in SF6 Circuit Breakers? A.7,6.2,6.6 bar B.7.2,6.6,6.2 C.7.1 ,6.4, 6.3 D.7.0,6.2,6.0	D
77	What is wrong related to maximum demand in TSS? A.CMD-Contract Maximum Demand B.If RMD exceed CMD penalty will be levied C.If both feeds from supply authority fails penalty will be exempted D.CMD can be altered can be altered at the same time with message	D
78	What is standard Dielectric Dissipation factor of Transformer oil in service? A.≤0.1 B. ≤0.05 C. ≤0.01 D. ≤0.02	C

79	What is the minimum clearance between two runners of S.I? A.40cm B.46cm C.48cm D.46mm	B
80	What is the maximum wear and condemning dia of glass fibre insulating rods in Arthur flury type PTFE to rotate it by 72°? A.13mm,22mm B.14mm,21mm C.12mm,23mm D.13.2mm,22.5mm	A
81	What is the minimum span length of OHE? A.18m B.22.5m C.27m D.13.5m	A
82	What is the material of catenary wire? A.copper B.Stranded cadmium copper C.Aluminium D.stranded copper	B
83	What is the maximum contact stagger on tangent track? A.100mm B.200mm C.250mm D.150mm	B
84	What is the maximum contact stagger on curve? A.300mm B.250mm C.200mm D.350mm	A
85	What is maximum relative stagger of OHE? A.200mm B.250mm C.300mm D.350mm	A
86	What is the Tension of contact wire? A.800kg B.900kgf C.1000kgf D.2000Kgf	C
87	What is the maximum stagger for main line OHE at Turnout? A.200mm B.250mm C.300mm D.150mm	A
88	What is the maximum stagger of Turnout OHE at Turnout? A.200mm B.250mm C.300mm D.350mm	B
89	What is PG clamp used for C,F jumper? A.1031-2 B.1041-2 C.1031-3 D.1051-3	B
90	What is PG clamp used for 105sq.mm G jumper? A.1031-2 B.1041-2 C.1031-3 D.1051-3	A
91	What is PG clamp used for 160sq.mm copper jumper to OHE? A.1031-2 B.1041-2 C.1031-3 D.1051-3	C
92	Expand EIG? A.Electronic inspector to Government B.Electrical inspector to Government C.Electricalintrospector to Government D.None of the above	B
93	What is true regarding overload capacity of Transformers? A.50%overload for 15mins B.100% overload for 5mins C.BothA&B correct D.None of A and B is correct	B
94	How many BM's are there in SP? A.1 B.4 C.3 D.2	B
95	What is maximum distance between two earth rods to work on OHE? A.800m B.1000m C.700m D.1500m	B
96	What is value 1.6 in 1.6/2.6 tonne capacity of Tirfor? A.Lifting load B.Pullingload C.maximum load D.None of the above	A

97	What is value 2.6 in 1.6/2.6 tonne capacity of Tirfor? A.Lifting load B.Pullingload C.maximum load D.None of the above	B
98	What is the standard value of X,Y for 250mm pulley at 35°C? A.1.0m,2m B.1.20m,2m C.1.30m ,2.5m D.1.30m,2.30m	D
99	What is the permissible water content for Transformer oil in service(below 145KV)? A.25ppm B.30ppm C.35ppm D.40ppm	C
100	Minimum Arcing Horns Gap in HV amd LV bushings of Power Transformer? A.500mm,250mm B.760mm,270mm C.650mm,450mm D.700mm,200mm	B
101	What is the diameter of stainless steel rope used for ATD? A. 8.5mm B.8mm C. 7mm D.7.5mm	A
102	How many strands are present in G- jumper? A. 110 B.120 C. 100 D.133	D
103	How many strands are there in C- jumper? A.17 B.19 C.10 D.21	B
104	How many strands are there in Anti creep wire? A.235 B.238 C.250 D. 38	B
105	How many strands are there in large span wire ? A.110 B.37 C.100 D.33	B
106	What is length of ss rope used for winch type regulating equipment? A.11.0m B.12.0m C.10.0m D.10.5m	D
107	What is length of ss rope used for 3 pulley type regulating equipment? A. 7.02m B. 7.03m C. 7.04m D. 7.05m	A
108	What is the value of linear expansion co-efficient of copper conductor? A.170x10-6m/ocB. 117x10-6m/ocC.1700x10-6m/ocD.17x10-6m/oc	D
109	What is the cross section of Anti creep wire? A. 110 B. 93 C. 125 D. 133	B
110	What is the cross section(sq.mm) of large span wire? A. 110 B. 93 C.125 D. 133	C
111	What is the max relative gradient of contact wire in two adjacent span on mainlines? A.1.5mm/mB. 5.2mm/mC.5.3mm/mD.5mm/m	A

112	What is the max relative gradient of contact wire in two adjacent span on loop line/yard? A.1.5mm/mB. 5.2mm/mC.5.3mm/mD.5mm/m	D
113	What is the vertical lift in OHE due to the static force exerted by the pantograph, called A. sag B. hog C. oscillations D. push up	D
114	What is the wave motion in contact wire due to the force exerted by the pantograph under running condition A. sag B. hog C. oscillations D. push up	C
115	What is the initial deflection adopted during grouting called? A. reverse deflection B. leaning D. both a&b D. none	A
116	What is the maximum overall earth resistance of PTFE N/S? A. 0.5ohm B. 2 ohm C. >10ohm D. 1ohm	A
117	What is the length(mm) of a glass fiber messenger insulator provided on catenary for PTFE? a) 1010 b)1020c) 1200 d) 1400	D
118	What is the minimum track centre at the location of SI assembly erected with free ends of runners towards the centre of turnout A. 1.65m B. 1.55m C. 1.45m D. 1.35m	A
119	What is the minimum track centre at the location of SI erected with free ends of runners away from the centre of turn out? A. 1.65m B. 1.55m C. 1.45m D. 1.35m	C
120	Minimum height of contact wire at level crossings A. 5.6m B. 5.7m C. 5.5m D. 5.8m	C
121	One meter contact wire weight A. 0.952 kgB. 0.962 kgC.0.752 kgD. 0.592 kg	A
122	One meter catenary wire weight A. 0.602 kgB. 0.902 kgC.0.702 kgD.0.502 kg	A
123	Condemned diameter of contact wire on Main line A. 10mm B. 12mm C. 8.25mm D. 8.05mm	C
124	Condemned diameter of contact wire on Yards A. 10mm B. 12mm C. 8mm D. 8.05mm	C
125	Permissible gradient of contact wire on Main line A.3mm/m B. 4mm/m C. 5mm/m D. 6mm/m	A

126	Permissible gradient of contact wire in Yards A. 11 mm/mB. 10.5mm/mC.10mm/mD.10.05mm/m	C
127	What relay will act when two different phases are bridged? A. WPC B. Panto flash over C. PTFF d) SOFT	A
128	What is the rating of drop out fuse of ATs provided at Station? A. 1amp B. 2 amp C. 10amps D. 11amps	A
129	What type of fire extinguisher is used for electrical fires? A. DCP B. water C. both a&b D. none	A
130	Specific gravity means A. Ratio of density of a solution to oil B. Ratio of density of a solution to base C. Ratio of density of a solution to acid D. Ratio of density of a solution to water	D
131	Power factor is the ratio of A. true power to apparent power B. true power to total power C. true power to real power D. true power to imaginary power	A
132	What is the purpose of arcing horns provided for ATs? A. as LA B. as earth C. both a&b D. none	A
133	What CB will trip when there is overload? A. LV B. HV C. LV IDMTL D. HV IDMTL	A
134	What are the voltage ratings primary and secondary of Traction power transformer? A. 220/25 B. 132/27 C. 220/27 D. both b&c	D
135	What is the purpose of shunt capacitor bank in TSS? A. improve PF B. decrease PF C. stable PF D. none	A
136	What is the gap of arcing horns of power transformers on HV side and LV side? A. 770&270 mm B. 760&260mm C. 760&270mm D. 770&260mm	C
137	What is the cross section of MS flat used for earthing of secondary terminal of traction transformer? A.75 x 8 mmB. 100 x12 mmC. 40 x 6 mmD. 50 x 6 mm	A
138	What is the max.Air pressure in gas CB or what pressure, pressure relief valve operates? A. 118kg / cm2B. 120kg / cm2C.18kg / cm2D.180kg / cm2	C
139	How the arc quenched in the CB? A. SF6 gas B. vaccum C. oil D. all of the above	D

140	What is the impedance of OHE / TKM in double line without RC? A. 0.41 ohms/KMB. 0.42ohms/KMC.0.24 ohms/KMD.0.43ohms/KM	C
141	BDV of 132/25KV transformer oil? A. 43kv/m B. 41kv/m C. 44kv/m D. 45kv/m	D
142	What relay will act when there is a heavy gas collection inside the transformer body? A. PRD B. Buchholz C. LV IDMTL D. none of the above	B
143	What is the clearance between phase to phase on 132KV side A. 4.60M B. 2.06M C. 3.08M D. 4.06M	B
144	What is the ground clearance on 132kv Side A. 4.0M B. 3.9M C. 3.8M D. 4.6M	D
145	What is the ground clearance on 25kv Side A. 4.0M B. 3.9M C. 3.8M D. 4.6M	C
146	Capacity of the fuse of the AT in HV/LV side A. 1/62 B. 62/1 C. 63/1 D. 1/63	D
147	Type of earthing used in the sub stations are A.Pipe earthingB. Plate earthing C.Grid earthingD.None of the above	A
148	What is the name of the equipment used to convert digital information to analog information? A. Transducer B. Modem C. Digital Meter D. All of the above.	A
149	Which relay recognizes the dead line and live line? A. OCR B. Panto flash over relay C. WPC D. DPR	B
150	What type of cooling is provided for the power supply unit at RC? A.Forced Cooling B.Natural air cooling C. Oil Cooling D.None	A
151	Which supply will be given for the working of any Numerical Relay – A. 110V DC B. 230V AC C. 24V DC D.None	A
152	Which of the following type of OCR is NOT used in LV side protection of Power Transformer A. IDMT OCR B.Instantaneous OCR C.Definite Time OCR D. None	B
153	Activation of LV REF Relay will issue trip command to A. FCB B. LVCB C. HVCB D. b&c	D

154	Which of the following Relay is NOT a part of Feeder Protection A. DPR B.**IDMT OCR** C. WPCrelay D. PTFF relay	B
155	Which of the following Relay is NOT a part of Capacitor Bank Protection A. Unbalance relay B. Under Voltage relay C. Over Voltage relay D.**None**	D
156	How many Current Transformers are utilized in Differential Protection scheme of Power Transformer **A. Four** B. Three C. Two D. One	A
157	How many Current Transformers are utilized in Protection scheme of Capacitor Bank A. One B.**Two** C. Three D. Four	B
158	In which of the following cases, DELTA-I relay will act? A. When the COAL in the loaded goods touches the OHE B. When a transient earth fault occurs on a mast whose Structure Bond was not intact C. When a JCB/tree touches the OHE **D. All of the above**	D
159	In Traction Protection Scheme, Local Breaker Backup(LBB)/Breaker Failure(BF) protection feature is utilized in **A.Feeder Protection relay** B. LV Protection relay C. Differential Relay D. None	A
160	Local Breaker Backup(LBB)/Breaker Failure(BF) protection feature present in Feeder Protection Relay will issue trip command to A. Feeder CB B. **LVCB** C. HVCB D. All of the above	B
161	Rated load current of 21.6 MVA Power Transformer with respect to LV side is A. 600A B.**800A** C. 1200A D. 163.6A	B
162	The tripping of both LVCB & HVCB (through Inter-trip relay) will happen A. If Transformer Differential Relay gets activated through Pressure Relief Device(PRD) B. If Transformer HV Relay gets activated through HV Instantaneous OCR C. If Transformer LV Relay gets activated through LV REF **D. All of the above**	D
163	Activation of Inter-trip Relay will issue trip commands to LVCB and HVCB. In order to activate the Inter-trip relay, which of the following element/relay must operate A. HV Instantaneous OCR, HV REF and Differential relay B. LV REF, HV IDMTL OCR C. Pressure Relief Device (PRD) D. All of the above	D
164	Acronym for SCADA A. Supervisory Center for Data Acquisition B. Supervisory Control and Data Acquisition C. Supervisory Command and Data Acquisition D. Standard Control and Data Acquisition	B

165	Acronym for RTU A.Remote Terminal Unit B.Receiving Terminal Unit C. Record Terminal Unit D. None	A
166	Which of the following module is not present in RTU? A. CPU Module B. DO Card C. PSU Card **D.AO Card**	D
167	The analog inputs from which of the following equipments will be extended to RTU so as to enable TPC to access the voltage and load profile of a particular TSS (in BZA Division) A. Feeder PT & LVCT **B.Feeder PT & Feeder CT** C. Feeder PT & HVCT D. None	B
168	Acronym of TEMS A. Traction Energy Management System B. Traction Energy Maintenance System C. Traction Energy Maintenance Server D. None	A
169	If the battery set voltage falls below 82V, then the AC/DC Monitoring & Tripping relay will issue trip command to A. Feeder CB B. LVCB C. HVCB D. All of the above	D
170	At 27°C, the Specific gravity of the electrolyte present in a battery cell should be A. 1.205 B. 1.215 **C.1.210** D. 1.195	C
171	Rated load current of 30.24 MVA Power Transformer with respect to LV side is A. 600A B. 800A **C.1120A** D. 229A	C
172	In a TSS, the combined resistance of the earthing system shall NOT be more than A. 10.0 Ω B. 2.0Ω **C.0.5 Ω** D. 1.0 Ω	C
173	The size of the MS flat used for providing the Earthing ring inside the Control room of a TSS is A. 75mm X8mm **B.50mm X 6mm** C. 45mm X 8mm D. 60mm X 8mm	B
174	The minimum working clearance between the live conductor and earthed structure where men are required to work shall be A.250mm B. 200mm C. **2.0 m** D. 500mm	C
175	What is the maximum permissible value for Tanδ of Power Transformer Bushings? A. 0.001 **B. 0.007** C. 0.002 D. 0.005	B
176	The OHE Voltage at the farthest point on the system even when heavily loaded does NOT fall below – **A. 19KV** B. 18KV C. 17KV D. 20KV	A
177	For a Traction Transformer, the Polarization ratios R60/R10 and R600/R60 should NOT be less than A. 1.5 & 1.3 B. 1.2 & 1.2 **C.1.4 & 1.2** D. 1.2 & 1.0	C
178	For 25KV, the minimum height of the bus bar from ground level is A. 3.5 m B. 3.0m C. 4.2m **D. 3.8m**	D

179	For 132KV, the minimum height of the bus bar from ground level is A.3.5 m B. 3.0 m C. 4.2 m D. **4.6 m**	D
180	The Competency Certificate issued for the skilled staff of Remote Control is A. TR-7 B. TR-9 C. **TR-8** D. TR-5	C
181	A conductor which forms electrical connection between two conductors or equipments but not under tension A. **JUMPER** B. DROPPER C. FEEDER D. BOND	A
182	The smallest section of OHE which can be isolated from the rest of system by manual operations A. SECTOR B. SUB-SECTOR C.**ELEMENTARY SECTION** D. None	C
183	In Conventional OHE, the area of cross section of Contact wire is A. 100mm^2 B. **107mm^2** C. 95mm^2 D. 65mm^2	B
184	In SP/SSP, the combined resistance of the earthing system shall NOT be more than A. 10.0 Ω B. **2.0 Ω** C. 0.5 Ω D. 1.0 Ω	B
185	what is the clearance of pantograph to platform shed of new testament : A. 1.45Mts B.1.48Mts C. 1.47Mts. D. 1.49Mts	C
186	what is the name of compound used for battery terminal connector : A.petroleum jelly. B.oil jelly C.transformer oil D. Lubricant	A
187	The distance between adjacent splices as per as possible to : A. <90Mts B. <70MtsC.>100 Mts. D. <100Mts	C
188	what is the height of 132 KV bottom conductor of power line crossing over on electrical Track: A. 14.5Mts B. 14.6 Mts. C. 14.7Mts D.14.8Mts	B
189	what is the 8 wheeler tower car maximum speed restriction : A.100KMPH B.90KMPH C.110 KMPH. D.120KMPH	C
190	Number of section insulators provided near at trip shed : A.05Nos B. 02Nos C.01No D. 04 Nos.	D
191	what is the name of insulator used in pollution zone : A) Long creepage composite insulator . B) Long creepage Porcelean insulator . C) Long creepage carbon insulator . D) Shackle insulator .	A
192	How many tracks used for "O" type portal in 25 KV AC Traction : A) 07 Tracks B) 06 Tracks. C) 08 Tracks D) 09Tracks	B

193	What is the maximum limit of track separation : A) 700 mm. B) 800mm C) 900mm D)1000mm	A
194	Not more than---------- No,s of splices shall be used in one tension length of 25 KV OHE. A) 16 B) 15 C) 18 D)20	B
195	What is the CPU: Core processing unit. Central processing unit. Central provision unit. Central procuring unit.	B
196	Where the bend steady arm is used in 25KV OHE : A) Overlap type section ' B) 4 span over lap C) Over lapping type Natural section and4 span over lap D) Neither of above	C
197	what is the length of overlap sweeping zone of new testament : A) 5mts B) 6mts C) 2mts D) 4mts	D
198	What is the speed limit of "C" class ODC in 25KV AC Traction : A) 20KMPH B) 25KMPH C) 15KMPH D) 20KMPH	C
199	What is the maximum short circuit current that the discharge rod can with stand for one second: A) 7000 Amps B) 6250 Amps C) 6500Amps D) 7250Amps	B
200	what is the condemnation diameter of a 105 sq mm contact wire is : A) 8.25 mm. B) 7.25mm C) 7.5mm D) 8.00mm	A
201	what is the length of buried rail in a traction substation : A) 10Mts B) 11Mts C) 12Mts D) 13Mts	C
202	where is the used obligatory mast in 25KV AC traction OHE : A) Turn out location . B) Cross over C) Curved location D) Over Lap section	A
203	what is the stores item stocked indent No : A) S1312 B) S 1313. C) S1314 D) S1315	B
204	contact wire ending cone ID No : A) 1117 B) 1119 C) 1118 D) 1120	C
205	what is the SCR means : A) South Central Railway B) Short Circuit Ratio C) Silicon control Rectifier D) Either of These	D
206	What is the Good span length of section insulator in 25 KVAC traction : 54.00 Mts. A) 54Mts B) 45Mts C) 36Mts D) 18Mts	A

207	what is the D.M.T.R means : A) Daily materials transfer register B) Daily materials transaction register. C) Dairy market transcation register D) Data marks trans record	B
208	what is the contact wire average life as per ACTM : A) 25 years. B) 30years C) 35years D) 28years	A
209	what is the maximum span used in OHE : A) 54Mts B) 36Mts C)72 Mts D) 45Mts	C
210	what is the ATD SS wire rope total number of strands: A) 240Nos B) 238 Nos. C)230Mts D)235Nos	B
211	what is the new testament of critical implantation on main line track : A) 2.7Mts B) 2.8Mts C) 2.9Mts D) 2.5 Mts.	D
212	what is the large span wire diameter : A) 14.70 mm B) 14.10mm C) 13.70mm D) 13,90mm	A
213	what is the H O E R in Indian railway act means: A) Hours Of Employment Regulation . B) Hours Of Engineering Regulation . C) Hours Of Entertainment Regulation . D) Hands of EntertainmentRecord .	A
214	what is the length of "G" JUMPER of new testament in used at turn out location : A) 3.00Mts B)5.00Mts C) 4.5Mts D) 4.00 Mts.	D
215	what name of the bond used in track circuit area : A)Y Bond B) Z Bond C) X Bond D) S Bond	B
216	what type of earthing used for equipment is in traction substation : A) Single Earthing B) Three point Earthing C) Double earthing. D) Pipe earthing	C
217	what is the D.G.A means : A) Dissolved Gas Analysis B) Dangerous Gas Accumulation C) Discharge Governing system D) Dissoved Governingoil system	A
218	what type of foundation is permitted for loose soil : A) N Type B) O Type C) G type D) F Type	C

219	what is meant by RTU : A) Reduced Time Unit B) Remote Terminal Unit C) Raising Travel Union D) Remote Time Unit	B
220	what relay will act when there is heavy gas collection inside the traction transformer body : A) Buchholz Relay B) Thermostat Relay C) Thermodyamic based Relay D) Compressed Gas Relay	A
221	what is the IDMTL means : A) Increment Devisive Maximum Translative Lead B) Inverse Definite Minimum Time Lag . C) Inverted Dwarf Mast Type Like D) Inverter DCLink Modulated Time Lag	B
222	what is the minimum power factor in traction substation : A) 0.8 B) 0.9 C) 0.85 D) 0.95	D
223	what is the fuse rating of 110 V 40 AH Battery charger : A) 30Amps B) 28Amps C)32 Amps D) 26Amps	C
224	what is the minimum BDV value of 132/25 KV traction power transformer : A) 38 KV /minute with gap 2.5 mm. B) 40 KV /minute with gap 2.5 mm. C) 35 KV /minute with gap 2.5 mm. D) 45 KV /minute with gap 2.5 mm.	D
225	what is the minimum clearance between 25 KV bus bar to ground as per ACTM: A)3.6Mts B) 3.8Mts. C) 3.5Mts D) 3.4Mts	B
226	What is the cross section of MS flat used for ear thing of secondary limb of traction transformer : A) 85x8=680 sq.mm. B) 80x8=640 sq.mm. C) 75x8=600 sq.mm. D) 70x8=560 sq.mm.	C
227	Battery set minimum value of D C supply for equipments : A)88 V B) 70V C) 78V D)68V	A
228	The distance between two earth rods does not exceed as per new testament : A) 650mts B) 600Mts C) 550Mts D) 500 Mts.	D
229	What is the time given for Reclosing of CB of shunt capacitor bank: A) 10 minutes . B) 15minutes C) 20minutes D) 25minutes	A

230	What is the O D C means : A) Over Dseign Consignment. B) Over Dimensional Consignment. C) Over Dose Consignment. D) Over Dimensional Cotainment.	B
231	what is the gap between ARCING horns of a traction power transformer on 132/25 KV PRIMARY & SECONDARY side : A) 760 mm & 270 mm. B) 750mm& 250mm C) 740mm & 230mm D) 730mm & 240mm	A
232	what is the standard drilling schedule of OHE mast 9.5 M long RSJ : A) 20No of Holes B) 30 Nos of holes. C) 40No.of Holes D) 50 No.of Holes	B
233	In the theft prone area the energisation of newly construction OHE can be charged earlier : A) 2.2 KV B) 1.5KV C) 3KV D) 3.5KV	A
234	What is the height of contact wire above Rail level for unregulated OHE? (A) 5.75m (B) 5.60m (C) 5.50m (D) 5.80m	A
235	What is the minimum height of contact wire at level crossing? (A) 5.75m (B) 5.60m (C) 5.50m (D) 5.80m	C
236	What is the difference in height of turnout OHE above mainline OHE? (A) 4cm (B) 10cm (C) 5cm (D) 6cm	C
237	What is the weight of contact wire per unit length? (A) 0.602kg/m(B) 0.9512kg/m (C) 0.983kg/m(D) 0.600kg/m	B
238	What is the permissible current density in contact wire? (A) 4 A/sq.mm (B) 4.5A/sq.mm (C) 10A/sq.mm (D) 6A/sq.mm	A
239	What is the distance between the suspension point and first dropper? (A) 6.75m (B) 2.25m (C) 9m (D) all of the above	B
240	What is the diameter of register arm dropper? (A) 5mm (B) 7mm (C) 12.24mm (D) none of the above	B
241	What is the diameter of Rigid dropper? (A) 5mm (B) 7mm (C) 12.24mm (D) none of the above	C
242	What is the condemned diameter of contact wire on loop/yard line? (A) 8.25mm (B) 8mm (C) 9mm (D) none of the above	A
243	What is the length of Bridle wire in tramway OHE? (A) 8.5m (B) 8m (C) 10.5m (D) none of the above	A

244	What is the permissible gradient of contact wire on yard line? (A) 5m m/m (B) 3mm/m (C) 10mm/m (D) 1.5mm/m	C
245	What is the max allowed stagger for Catenary wire on curved track? (A) +/-200mm(B) +/-300mm (C) +/-100mm (D) zero	B
246	What is the minimum clearance between OHE near FOB to earth? (A) 270mm (B) 320mm (C) 250mm (D) 220mm	C
247	What is the clearance of danger zone? (A) 4.5m (B) 3m (C) 6m (D) 2m	D
248	What is the width of faively AM-12 type pantograph? (A) 1800mm (B) 2032mm (C) 2000mm (D) 1200mm	A
249	What is the standard (vertical & horizontal) long time (LTC) clearance in coastal area? (A) 270mm (B) 320mm (C) 250mm (D) 220mm	C
250	What is the clearance between two OHE in an insulated overlap? (A) 200mm (B) 500mm (C) 250mm (D) 220mm	B
251	What is the Min clearance between top live OHE to bottom power line crossing? (A) 6m (B) 14.6m (C) 4.5m (D) none of the above	C*
252	What is the length of Pedestal insulator? (A) 500mm (B) 520mm (C) 420mm (D) 540mm	C
253	What is the length of long creepage path bracket insulator? (A) 1050mm (B) 1300mm (C) 1400mm (D) 1500mm	A
254	What is the name of the jumper used at overlap type neutral section? (A) F jumper (B) C jumper (C) G jumper (D) none of above	A
255	What is length of SS rope used for winch type regulating equipment? (A) 2m (B) 10.5m (C) 7.02 m (D) 2.5m	B
256	What is length of SS rope used for 3 pulley type regulating equipment? (A) 2m (B) 10.5m (C) 7.02 m (D) 2.5m	C
257	What is the total tension on tramway type OHE? (A) 1700KG (B) 1300KG (C) 1250 KG (D) 1000KG	C

258	What is the tension provided in Anti creep wire? (A) 1300KG (B) 2000 KG (C) 1000 KG (D) 1250KG	D
259	What is the max difference between two consecutive span? (A) 18m (B) 22.5m (C) 63m (D) 27m	A
260	What is the wind pressure at red/heavy zone? (A) 112.5kg/sq.m (B) 150kg/sq.m (C) 75kg/sq.mm (D) none	B
261	What is the max relative gradient of contact wire in two adjacent span on loop line/yard? (A) 1.5mm/m (B) 5mm/m (C) 10mm/m (D) 3mm/m	B
262	What is the critical implantation allowed in IR ? (A) 2.5m (B) 3m (C) 4.75m (D) 2.36m	D*
263	What is the implantation on inside curve? (A) 2.5m + Curveallowance (B) 2.75/3.1m (C) 4.75m (D) 3.5m	A
264	what is the maximum leaning at a height of 1/3rd of the contact height 1.85m? (A) 33mm (B) 50mm (C) 60mm (D) 100mm	B
265	what is the height of height gauge bar at LC gate? (A) 4.92m (B) 4.76m (C) 4.67m (D) 5.5m	C*
266	what is the embedded length of the mast? (A) 1.5m (B) 1.45m (C) 1.85m (D) 1.35m	D
267	what is the reverse deflection given for structure on inside track? (A) +3cm (B) +6cm (C) +9cm (D) except (c)	B
268	what is the soil bearing capacity of the rocky soil? (A) 21500kg/sq.m (B) 11500kg/sq.m (C) 5500kg/sq.m (D) 16500kg/sq.m	A
269	what is the contact stagger for turnout line for cross type turnout? (A) 200mm (B) 400mm (C) 300mm (D) 500mm	C
270	How many splices allowed in one tension length? (A) 4 (B) 5 (C) 3 (D) 2	*
271	What is the minimum track centre at the location of SI erected with free ends of runners away from the centre of turnout? (A) 1.45m (B) 1.65m (C) 1.726m (D) 2m	A

272	Maximum speed restriction of 4 wheel Tower car – type II (A) 110kmph (B) 80kmph (C) 60kmph (D) 40kmph	D
273	Gross clearances of class B ODC (A) >9" (B) between 3" to 6" (C) between 6" to 9" (D) none	C
274	Speed restriction for class A ODC (A) 40kmph (B) 30kmph (C) 25kmph (D) 15kmph	A
275	Diameter of discharge rod wire (A) 40 mm (B) 50mm (C) 70mm (D) none	C
276	Bridle wire PG clamp ID NO. (A) 1030 (B) 1040 (C) 1070 (D) 6170	C
277	Contact wire splice ID NO. (A) 1090 (B) 1080 (C) 1100 (D) 1280	B
278	Large span wire ending cone ID.NO. (A) 1121 (B) 1118 (C) 1140 (D) 1280	C
279	No. of elementary sections allowed on umbrella mast (A) 2 (B) 6 (C) 4 (D) 1	A
280	Height of contact wire at raised level (A) 5.6m (B) 5.75m (C) 5.8m (D) 6.1m	A
281	PTFE N/S dead wire length (A) 4.8m (B) 5.6m (C) 2.968m (D) 41m	C
282	How many types of anti wind clamps are there? (A) 2 (B) 4 (C) 6 (D) 8	A
283	For how many parties the TPC can issue permit to Work on the same elementary section at one time? (A) 2 (B) 4 (C) 1 (D) none	C
284	Max. Number of cantilevers on a drop arm (A) 2 (B) 4 (C) 3 (d) 1	B
285	ACTM (A) AC Train Manual (B) AC Traction Manual (C) AC Traffic Manual (D) AC Training Manu	B

286	GR & SR (A) General Rules & Subsidiary Rules (B) General Rules & Safety Rules (C) Grand Rules &Subsidiary Rules (D) Grand Rules & Safety Rules	A
287	CORE (A) Centre For Rural Electrification (B) Central Organization for Railway Electrification (C) Co-Related (D) Centre of Research & Economy	B
288	RDSO (A) Research Design & Standard Organization (B) Revenue for Direct Supply Order (C) Railway, Design &Standard Organization (D) Research, Design & Specification Organization	A
289	RITES (A) Railway Institute for Technical & Economical Services (B) Rail India Technical & Economical Services (C) Rail India Trading & Economical Services (D) Rail India Technical & Engineering Services	B
290	SCADA (A) Supervisor Control & Data Acquisition (B) Supervisor Computer & Data Acquisition (C) Supervisor Control & Discipline Act (D) Super Computer & Data Acquisition	A
291	IRIEEN (A) Indian Railway Institute of Entertainment Engineer (B) Indian Railway Institute of Education Expert (C) Indian Railway Institute of Electrical Expert (D) Indian Railway Institute of Electrical Engineers, Nasik	D
292	CRB (A) Compensation & Rehabilitation Burro (B) Compensation & Rehabilitation Board (C) Chairman Railway Board (D) Combined Ranks of Bureaucracy	C
293	Full form of SWR (A) Section Working Rules (B) Station Working Rules (C) Safety Working Rules (D) Safety with remote	B
294	MOSR (A) Minister of State Railway (B) Minister of Suburban Railway (C) Modernization of State Railway (D) Member Of Supply & Rehabilitation	A
295	Blow-off is calculated by the formula ----------where, Wc&Wq= wind load per unit length of contact &catenary respectively. Tc&Tq = tension in contact & catenary respectively . L= Span length (A) 1.5 (Wc + Wq) L2 / 8 (Tc +Tq) (B) (2 Wc + Wq) L2 / 8 (Tc +Tq) (C) (Wc + Wq) L2 / 8 (Tc +Tq) (D) 1.05 (Wc +Wq) L2 / 8(Tc +Tq)	D

296	Axial distance between catenary & contact wire at the OHE support, in vertical plane is called (A) Implantation (B) Gradient of OHE (C) Encumbrance (D) Stagger	C
297	In AC traction, height of contact wire at level crossing from rail level (regulated OHE) (A) 5.50 m (B) 5.55 m (C) 5.60 m (D) 5.65 m	A
298	Maximum permissible relative gradient of contact wire in two adjacent span shall not be greater than on main lines (A) 1.5 mm /m. (B) 2 mm /m. (C) 3 mm /m. (D) 4 mm /m.	A
299	Maximum permissible relative gradient of contact wire in two adjacent span shall not be greater than on sidings (A) 2 mm /m. (B) 3 mm /m. (C) 4 mm /m. (D) 5 mm /m.	B
300	The displacement of contact wire with respect to the pantograph axis is called (A) Implantation (B) Stagger of contact wire (C) Gradient of contact wire (D) Sag	B
301	In AC traction, maximum stagger of contact wire on curved track is (A) 380 mm (B) 300 mm (C) 229 mm (D) 200 mm	B
302	In AC traction, maximum stagger of contact wire on tangent track is (A) 380 mm (B) 300 mm (C) 229 mm (D) 200 mm	D
303	Maximum stagger is allowed at mid span is (A) 229 mm (B) 200 mm (C) 152 mm (D) 100 mm	D
304	Contact wire is placed in zig- zag manner in entire span length , why ? (A) To avoid formation of groove on pantopan strip (B) Uniform rubbing of pantopan strip within current collection zone (C) To avoid breakdown due to formation of groove in pantopan strip (D) All of the above	D
305	Which factor affects the stagger of contact wire ? (A) Blow-off (B) Versine (C) Track slewing (D) All of the above	D
306	The displacement of contact wire from its original position due to wind pressure across the track is called (A) Blow-off (B) Versine (C) Stagger (D) Super elevation	A
307	On tangent track, contact stagger is 200 mm at support, what will be the catenary stagger? (A) 300 mm (B) 200 mm (C) 100 mm (D) Zero	D
308	On curved track , contact stagger is 300 mm. at support, what will be the catenary stagger (A) 300 mm (B) 200 mm (C) 100 mm (D) Zero	C
309	The offset of the track centre from the chord joining the two adjacent points at the track centre is called (A) Super elevation (B) Versine (C) Blow-off (D) Span length	B

310	Which type of turnout is best for main line (A) Over lap type (B) Knuckle type (C) Cross type (D) None of the above	A
311	At the obligatory location, turn out contact wire is kept ....mm above from the main line contact wire (A) 100 mm (B) 50 mm (C) 20 mm (D) 5 mm	D
312	The arrangement of overlap type turn out will be in (A) One span (B) Two spans (C) Three spans (D) Four spans	B
313	The arrangement of knuckle type turn out will be in (A) One span (B) Two spans (C) Three spans (D) Four spans	
314	The arrangement of cross type turn out will be in (A) One span (B) Two spans (C) Three spans (D) Four spans	B
315	Which type of turnout is most suitable for high speed OHE (A) Knuckle type (B) Cross type (C) Over lap type (D) All of the above	C
316	In overlap type turn out, the normal desirable length of zone, where the panto contacts both contact wire will be in (A) 500 mm (B) 1 m (C) 6 m – 9 m (D) 12 m	C
317	During the movement of panto from cross over to main line, take-in Should be within (A) 400 mm (B) 450 mm (C) 650 mm (D) 900 mm	C
318	A neutral section is provided in OHE between two 25 kV, single phase , 50 Htz. traction substations due to (A) To separate the zones, which fed by the adjacent substation of different phase (B) To increases the currentcarrying capacity of the OHE (C) To minimise the voltage drop in OHE conductors (D) All of the above	A
319	Normally, power generation & transmission system of the supply authorities are of three phase type &incoming supply is taken in consecutive 25 kV ac traction sub stations is of different phase in rotation , due to (A) Balance the traction load on each phase (B) Unbalance the traction load on each phase (C) Obtained maximum power (D) Minimize voltage drop	A
320	Normally, bridging interrupters at SP are in (A) Close position (B) Open position (C) When traction load increased than closed bridging interrupter (D)When traction load decreased than closed bridging interrupter	B
321	Normally, insulated overlap is employed opposite FP. What precautions should be taken , when adjacent TSS supply is extended upto FP by closing bridging interrupter at SP ? (A) Handed over a caution order to driver for lower the panto before approaching insulated overlap at FP (B) Both side of FP, power supply should be switched –off (C) Both feeder CB should be in open position (D) All of the above	D
322	Which factor reduced the earth resistance (A) Packing of the earth pit with powder coke & soft soil (B) Providing salt (C) Sprinkle water (D) All of the above	D

323	Tong tester is works like a (A) Voltmeter (B) Ammeter (C) Multimeter (D) Megger	B
324	Multimeter is used to measure (A) Voltage (B) Current (C) Resistance (D) All of the above	D
325	Megger is used to measure (A) Voltage (B) Current (C) Insulation resistance (D) All of the above	C
326	Which elements are causes of fire, when elements are in contact to each other? (A) Inflammable substance & ignition temperature (B) Oxygen & ignition temperature (C) Inflammable substance& oxygen (D) All of the above.	D
327	Soda-acid type extinguisher is suitable to extinguish (A) Fire in solid inflammable substances (B) Fire in liquid inflammable substances (C) Fire in gas inflammable substances (D) All of the above.	D
328	Foam type extinguisher is suitable to extinguish (A) Electrical fire due to short ckt. (B) Petrol fire (C) Electrical fire due to over load (D) All of the above	D
329	Which extinguisher is suitable to extinguish electrical fire (A) Carbon di-oxide (B) Carbon tetra chloride (C) Dry chemical powder (D) All of the above	D
330	HRC fuses provide best protection against (A) Short circuit (B) Lightning (C) Sparking (D) Fire	A
331	If OHE breakdown or defect in OHE , which are likely to affect the train services noticed by any railway servant, will be reported immediately to (A) TPC (B) Station master (C) Section controller (D) Either (A) or (B) or (C)	D
332	On receipt of the first report about the breakdown by the TPC , the first & prime step is taken by the TPC (A) Direct TRD official to proceed to the site (B) Inform Sr. DEE /TRD & other officers and seek their direction (C) Switch off power supply to the affected lines & inform the section controller (D) Permitting movement of steam or diesel hauled train, if possible	C
333	The first supervisors or officers of the TRD, reaching the site of the breakdown should (A) Make a quick assessment of damage & the time required for restoration (B) Arrange for preservation of evidence (C) Arrange or ensure the safety rules to be observed as per GR & SR (D) All of the above	D
334	Gradient of OHE to be maintained on main line A. 10 mm per mtr B. 5 mm per mtr C. 8 mm per mtr D. 12 mm per mtr	A
335	Maximum span length in regulated OHE A. 67.5mtr B. 72.00 mtr C. 63.0 mtr D. 58.5 mtr	B

336	Normal contact wire height with 100 mm pre sag A) 5.60 mtr B) 5.50 mtr C) 5.55mtr D) 5.80 mtr	A
337	Minimum height of contact wire at LC gate A)5.60 mtr B)5.80 mtr C)5.50 mtr D)5.55mtr	C
338	Implantation at inside curve A)2.80 mtr B)2.75 mtr C)2.50mtr D)4.75 mtr	B
339	Critical implantation on main line A)2.36 mtr B)2.50 mtr C)3.00 mtr D)2.80 mtr	A
340	Implantation to be maintained at obligatory mast A)3.00 mtr B)2.80 mtr C)2.75 mtr D)2.50 mtr	A
341	Stagger of catenary wire at curve A)0 B) ±100 C) -100 D)+100	B
342	Long duration horizontal clearance between live OHE and earth A)250 mm B) 300 mm C)220 mm D)270 mm	A
343	Combined earth resistance at TSS is A)<0.5Ω B)<2Ω C)<5Ω D)<10Ω	A
344	Embedded length of the mast in foundation concrete A)1.35 mtr B)1.40 mtr C)1.50 mtr D)1.60 mtr	A
345	The smallest section of OHE which can be operated remotely is called A) Sector B) Sub sector C) Elementary section D) All of the above	B
346	The smallest section of OHE which can be isolated off circuit from the rest of the system by manual operation is called A) Elementary section B) sector C) sub sector D)Feeding zone	A
347	RDSO (A) Research Design& Standard Organization (B) Revenue for Direct Supply Order (C) Railway, Design & Standard Organization (D) Research, Design & Specification Organization	A
348	RITES (A) Railway Institute for Technical & Economical Services (B) Railway India Technical & Economical Services (C) Railway India Trading & Economical Services (D) Railway India Technical & Engineering Services	B

349	SCADA (A) Supervisor Control & Data Acquisition (B) Supervisor Computer & Data Acquisition (C) Supervisor Control & Discipline Act (D) Super Computer & Data Acquisition	A
350	IRIEEN (A) Indian Railway Institute of Entertainment Engineer (B) Indian Railway Institute of Education Expert (C) Indian Railway Institute of Electrical Expert (D) Indian Railway Institute of Electrical Engineer, Nasik	D
351	IDMT (A) Inverse Definite Minimum Time (B) Industrial Development Management Training (C) Intermediate Definite Minimum Time (D) Inverse Definite Maximum Time	A
352	Main line interrupter is denoted by B.M. i.e (A) Bus Main (B) Breaker Main (C) Bus Machine (D) Blocking Main	B
353	Yard line isolator switch is denoted by S.S. i.e (A) Sectioning Switch (B) Switch Main (C) Sectioning Siding (D) Switch Siding	D
354	A neutral section is provided in OHE between two 25 kV, single phase, 50 Htz. traction substationsdue to (A) To separate the zones, which fed by the adjacent substation of different phase (B) To increases the current carrying capacity of the OHE (C) To minimise the voltage drop in OHE conductors (D) All of the above	A
355	25 kV traction system needs the supply of (A) Single phase (B) Two phase (C) Three phase (D) Three phase & neutral wire	A
356	The distance of OHE section between FP & SSP or SSP & SSP or SSP & SP is called. (A) Feeding length (B) Feeding zone (C) Sector (D) Sub sector	D
357	Interrupter is a (A) Non automatic type circuit breaker (B)Automatic type circuit breaker (C) Both 'a' and 'b' (D) Neither 'a' nor 'b'	A
358	25. Normally, bridging interrupters at SP are in (A) Close position (B) Open position (C) When traction load increased than closed bridging interrupter (D) When traction load decreased than closed bridging interrupter	B
359	26. Distance between two consecutive OHE structures is called (A) Tension length (B) Span length (C) Encumbrance (D) Stagger	B
360	Standard span length in regulated AC traction is (A) 55 meters (C) 57.5 meter (C) 49.5 meter (D) 61 meter	C
361	Difference between two consecutive span length should not be more than (A) 25 m. (B) 20 m. (C) 18 m. (D) 16 m.	C

362	Distance between one anchoring end to other anchoring end of OHE's conductors is called (A) Tension length (B) Span length (C) Implantation (D) Encumbrance	A
363	In AC traction, normal encumbrance at support is (A) 1.9 m (B) 1.4 m (C) 0 .9 m (D) 2.0 m	B
364	In AC traction, the axial distance between catenary & contact wire in vertical plane at mid span should not be less then (A)150 mm (B)170 mm (C) 180 mm (D)270 mm	A
365	At obligatory structure of turnout, It is general practice to give encumbrance (A) 1.4 m. turnout OHE & 0.9 m main line OHE (B) 0.9 m. turnout OHE & 1.4 m main line OHE (C) 1.4 m. turnout OHE & 1.4 m main line OHE (D) 0.9 m. turnout OHE & 0.9 m main line OHE	A
366	Droppers are made out of (A) Annealed copper (B) Hard drawn copper (C) Cadmium copper (D) Bronze	B
367	In AC traction, how many droppers in 58.5 m span length (A) 9 droppers (B) 8 droppers (C) 7 droppers (D) 6 droppers	C
368	Material of AC catenary wire is (A) Cadmium copper (B) Annealed copper (C) Hard drawn copper (D) Bronze	A
369	Over all diameter of ac catenary wire is (A) 12.56 mm (B) 12.25 mm (C) 10.50 mm (D) 9.20 mm	C
370	The displacement of contact wire with respect to the pantograph axis is called (A) Implantation (B) Stagger of contact wire (C) Gradient of contact wire (D) Sag	B
371	The displacement of contact wire from its original position due to wind pressure across thetrack is called (A) Blow-off (B) Versine (C) Stagger (D) Super elevation	A
372	OHE conductors are terminated on auto tensioning device (ATD) at both end of tension lengthon anchoring structures. This type of OHE is called (A) Regulated OHE (B) Unregulated OHE (C) Tram way OHE (D) Compound OHE	A
373	In regulated OHE, when temperature increased than tension of OHE conductors (A) Increased (B) Decreased (C) Remains same (D) Cannot say	C
374	In regulated OHE, Where anti-creep point is provided ? (A) Starting of tension length (B) Finishing of tension length (C) Midway of tension length (D) All of the above	C
375	Pre sag in contact wire is given in regulated OHE due to (A) Pantograph approaching mid span helps to make contact wire horizontal (B) Improved current collection at higher speed (C) Avoid hogging at low temperature (D) All of the above	D

376	Insulated overlap is required for (A) OHE sectioning purpose (B) To kept OHE in current collection zone at curve (C) To maintain height of OHE conductors (A) All of the above	A
377	In AC traction, cut-in insulators are provided at insulated overlap, the distance of cut-in insulator from the mast is (A) 18 m (B) 9 m (C) 4.5 m (D) 2 m	D
378	Which factor should be taken into account to locate neutral section (A) Signal location (B) Gradient of section (C) Level Crossing gate (D) All of above	D
379	At the obligatory location, turn out contact wire is kept ....mm above from the main linecontact wire (A) 100 mm (B) 50 mm (C) 20 mm (D) 5 mm	B
380	In AC traction, Which jumper distribute the current between catenary wire & contact wire (A) "C" Jumper (B) "F" jumper (C) "G" jumper (D) "S" jumper	A
381	The arrangement of the cantilever assembly depends upon the (A) Height of contact wire (B) Setting distance (C) Stagger (D) All of the above	D
382	Lightning arrester prevents OHE from (A) Surge& transient voltage (B) Corrosion of –ve path conductor (C) Back e.m.f. (D) All of the above	A
383	In AC traction, track bonding is done upto the distance either side from the FP (A) 5 km (B) 3 km (C) 2 km (D) 1 km	D
384	Minimum long duration horizontal clearance from 25kv live part to earth is (A) 300mm (B) 350mm (C) 250 mm. (D) 200mm	C
385	Contact wire height at level crossing to be maintained at A. 5.50 m. B. 5.10m C. 5.00m D. 5.40m	A
386	OHE Catenary stagger to be maintained at curves track A)-200mm B)+200mm C)-200mm to +200mm D) -200mm to +150mm	C
387	Contact wire gradient in Mainline OHE permitted A)1.5mm/m B)2mm/m C)3mm/m. D)3.5mm/m	C
388	Maximum number of splices in one tention length is permitted A)15nos B)13nos C)14nos D)12nos	A
389	Codal life of contact wire is A) 30Years B) 40Years C) 35Years D)25Years	B

390	Track separation at obligatory structure should between A)250mm to 500mm B)300mm to 600mm C) 150mm to 650mm D)150mm to 700mm	D
391	Stagger at section insulator is permitted A) +/-100mm B) +/-150mm C)+/-175mm D)+/-200mm	A
392	"G"jumper distance from Obligatory structure is A) 5.6 m. B)5.7m C)5.8m D)5.9m	A
393	Opposite to TSS either side traction rail cross bond to be at distance A) 250m,500m,650m, 950m B) 300m,500m,700m,1000m. C) 200m, 450m, 600m, 900m D) 200m, 400m, 600m, 950m	B
394	Implantation of mast on platform should be A) 4.5m B) 4.25m C) 4.75 m. D) 4.2m	C
395	Minimum setting distance of Gantry upright A)4.20m B)4. 30m. C) 4.25m D)4.10m	B
396	Power line crossing 11 kv in Electrified section only permitted by A) Underground cable . B)Overhead Line B) C) Underground cable & Overhead line D)Neither of these.	A
397	Minimum encumbrance of OHE is A) 300 mm B) 200mm C) 150mm D)250mm	C
398	Diameter of in-span droppers A)4mm B) 5mm C) 3mm D) 4.5mm	B
399	1st dropper (A dropper) distance from support is A) 2.25 m. B)2.3m C) 2.4m D)2.5m	A
400	Movement of ODC in 25 kv Ac section if gross clearance is above 250mm speed restriction is NIL A) 100Kmph B)60Kmph C) Nill D) 75Kmph	C
401	Wind pressure red zone is A) 140kg/m²B)130Kg/m² C) 135Kg/m² D) 150Kg/m²	D
402	Stagger at PTFE neutral section should at support is A. Zero B. 150mm C. 100mm D.125mm	A
403	At Insulated over lapmin. Clearance between to parallel conductors is A) 300mm B) 500 mm C) 350mm D) 400mm	B

404	Maximum difference between two consecutive spans in mainline permitted 18 m A) 19m B) 36m C) 18m D) 20m	C
405	OHE Impedance of Double track OHE without RC 0.24 ohm/KM A) 0.2ohm/KM B) 0.24ohm/KM C)0.15ohm/KM D) 0.22ohm/KM	B
406	'R' Type portal is used to cover multiple OHE for maximum track of A) 10 B) 9 C) 12 D)8	D
407	Cross section of "O"' Type Portal up right is A) 500mmX500mm B) 450mmX450mm C) 550mmX550mm D)600mmX600mm	C
408	The horizontal distance from nearest face of mast to centre line of track is A) Implantation B)Implementation C) Stagger D) Implaitation	A
409	The smallest section OHE which can be isolated from rest of OHE by manual operation is A) Elementary section B) Sector C) Sub Sector D) Curved section	A
410	The maximum offset of the rail on which spans have been measured of curved track from the chord connecting two point is A) Verse B) Vast C) Versine D) setting distance	C
411	Boards to be provided before & after Neutral section A)500m, 250m, DJOFF ,DJ ON B) 500m, DJOFF ,DJ ON ,DJ ON EMU C) 500m, 250m, DJOFF ,DJ ON ,DJ ON EMU D) 500m, 300m, DJOFF ,DJ ON ,DJ ON EMU	C
412	No OHE mast should , as for as possible be located in the same lane as the signal for distance at least before signal is A) 500m B) 400m C) 550m D)600m	D
413	Fuse rating of 100 KVA AT at HT side A)5Amp B) 4Amp C) 7Amp D) 8Amp	B
414	Earth resistance of earthing system shall be not more than at switching station is A) 5ohms B) 4Ohms C) 3Ohms D)2Ohms	D
415	Length of buried 52 kg rail at TSS is ---------- m A) 10m B) 11m C) 12m D)13m	D
416	Maximum tension length of OHE ---------- m A) 1800m B) 1500m C) 2000m D) 2500m	B
417	Competency certificate issued to supervisor OHE A) TR-04 B) TR-03 C) TR-05 D) TR-06	C

418	Secondary voltage of type II PT A) 110 V B) 100V C) 90V D) 120V	A
419	50% over loading of power transformer is permitted up to ---------min A)25min B)30min C) 40min D)15min	D
420	No of taps in power transformer A) Five B) Four C) Six D) Seven	C
421	Rating of lighting arrester provided in 25 kv side or OHE gantry A) 42KV B) 40KV C) 35KV D) 30KV	A
422	Research Design & standard Organization located at A) Kanpur B) Raibareli C) Delhi D) Lucknow	D
423	Flash point of transformer oil in service A)140°C B) 150°C C)160°C D)170°C	A
424	Acidy of transformer oil in service permitted is A) 0.6mg KOH/g B) 0.65mg KOH/g C) 0.5mg KOH/g D)0.55mg KOH/g	C
425	Capacitance of capacitor measured in A) Micro Henries B) Micro farads C) Micro Ohms D) Micro Siemens	B
426	Variation of capacitance value of capacitor allowed A) Seven percent B) Eight percent C) Nine Percent D)Six percent	D
427	Capacitor bank in the TSS are provided to improve ---------- A) Voltage B) Current C) Power D)Power Factor	D
428	The shortest section ofHE which can be isolated by remotely Sub-sector A) Sector B) Super Sector C) Sub Sector D) Service sector	C
429	SWR means A) Section Working Rules B) Station working rules C) Staff Warning Rules D) Staff Working Rules	B
430	Pantograph length of AM-18 is A) 2030mm B)2025mm C) 2032 mm D)2020mm	C
431	Insulation resistance value permitted EHV winding to 25 kv winding for new power transformer is A) 2000ohms B) 1500ohms C)2500 ohms D)1000ohms	C

432	Capacity of battery set provided at TSS is A) 110 V 200AH B) 110V,180AH C) 100V,120AH D)110V 150AH	A
433	Bonding at LC gate Inter track,inter rail bond with in distance of A) 7.5m B) 10m C) 8.5 m D)5m	D
434	What is the height of contact wire above Rail level for Regulated OHE (with pre sag of 10 cm) (A) 5.50m (B) 5.60m (C) 5.80m (D) 5.80m	B
435	What is the minimum height of contact wire at level crossing? (A) 5.75m (B) 5.60m (C) 5.50m (D) 5.80m	C
436	What is the difference in height of turnout OHE above mainline OHE? (A) 4cm (B) 10cm (C) 5cm (D) 6cm	C
437	What is the diameter of the contact wire? (A) 12.54mm (B) 12.24mm (C) 10.54mm (D) 10.24mm	B
438	What is the diameter of catenary wire? (A) 12.54mm (B) 12.24mm (C) 10.54mm (D) 10.24mm	C
439	What is the weight of contact wire per unit length? (A) 0.602kg/m(B) 0.9512kg/m (C) 0.983kg/m (D) 0.600kg/m	B
440	What is the weight of catenary wire per unit length? (A) 0.5973g/m (B) 0.9612kg/m (C) 0.953kg/m (D) 0.700kg/m	A
441	What is the normal spacing between droppers? (A) 6.75m (B) 2.25m (C) 9m (D) all of the above	C
442	What is the distance between the suspension point and first dropper? (A) 6.75m (B) 2.25m (C) 9m (D) all of the above	B
443	What is the diameter of in span dropper? A) 5mm (B) 7mm (C) 12.24mm (D) none of the above	A
444	What is the diameter of Rigid dropper? (A) 5mm (B) 7mm (C) 12.24mm (D) none of the above	C
445	What is the condemned diameter of contact wire on main line? (A) 8.25mm (B) 8mm (C) 9mm (D) none of the above	A

446	What is the condemned diameter of contact wire on loop yard line? (A) 8.25mm (B) 8mm (C) 9mm (D) none of the above	B
447	What is the length of Bridle wire in tramway OHE? (A) 8.5m (B) 8m (C) 10.5m (D) none of the above	A
448	What is the permissible gradient of contact wire on main line? (A) 5mm/m (B) 3mm/m (C) 10mm/m (D) 1.5mm/m	B
449	What is the permissible gradient of contact wire on yard line? (A) 5mm/m (B) 3mm/m (C) 10mm/m (D) 1.5mm/m	C
450	What is the max stagger allowed for contact wire in tangent track? (A) +/-200mm (B) +/-300mm (C) +/-100mm (D) zero	A
451	What is the stagger value of catenary wire on tangent track? (A) +/-200mm (B) +/-300mm (C) +/-100mm (D) zero	D
452	What is the max allowed stagger for catenary wire on curved track? (A) +/-200mm (B) +/-300mm (C)+/-100mm (D) zero	C
453	What is the diameter of anti creep wire? (A) 15.2mm (B) 12.5mm (C) 14.7mm (D) 9.54mm	B
454	What is the diameter of larger span wire? (A) 15.2rnm (B) 12.5mm (C) 14.7mm D) 9.54mm	C
455	What is the length of C-jumper? (A) 2m (B) 1.6m (C) 3.8m (D) 2.5m	B
456	What is the length of F-jumper? (A) 2m (B) 1.6m (C) 3.8m (D) 2.5m	B
457	What is the cross sectional area of C or F jumpers? (A) 105sq. Mm (B) 50sq mm (C) 107sqmm (D) 63sqmm	B
458	What is the name of the jumper used at overlap type neutral section? (A) F jumper (B) C jumper (C) G jumper (D) none of above	A
459	What is the allowed separation between two c-jumpers in Regulated OHE? (A) 350nm (B) 400m (C) 100m (D) none	A

460	What is the allowed separation between two c-jumpers in unregulated OHE? (A) 350m (B) 400m (C) 100m (D) none of above	B
461	What is the name of jumper to avoid theft of OHE? (A) F jumper (B) C jumper (C) G jumper (D) anti theft jumper	D
462	What is the size of RC wire? (A) 16/3.99mm (B) 19/3.99mm (C) 19/4.99mm(D) 15/3.99mm	B
463	What is the diameter of SS rope used for ATD? (A) 15.2mm (B) 12.5mm (C) 8.5mm (D) 9.54mm	C
464	How many strands are present in G- jumper? (A) 19 (B) 133 (C) 7 (D) 238	B
465	How many strands are there in C- jumper? (A) 19 (B) 133 (C) 7 (D) 238	A
466	How many strands are there in catenary wire? A) 19 (B) 133 (C) 7 (D) 238	A
467	How many strands are there in Anti creep wire? (A) 19 (B) 133 (C) 7 (D) 238	A
468	What is length of SS rope used for 3 pulley type regulating equipment? (A) 2m (B) 10.5m (C)7.02 m (D) 2.5m	C
469	What is length of the mast used for OHE? (A)9.75m (B)9.5m (C)9.2m (D)12.21m	B
470	What is the embedded length of mast? (A) 1.5m (B) 1.45m (C) 1.85m (D) 1.35m	D
471	What is the implantation adopted for multi cantilever arrangement ? (A) 2.5m (B) 3m (C) 4.75m (D) 2.36m	B
472	What is the maximum tension length for unregulated OHE? (A) 1600m (B) 750m (C) 2000m (D) 1250m	C
473	What is the maximum tension length for regulated OHE? (A) 1600m (B) 750m (C) 2000m (D) 1250m	A
474	There are two SSP's in the feeding zone of a TSS on both sides. How many sub sections are there in that feeding zone: (A) 2 subsectors (B) 8 subsectors (C) 4 subsectors (D) 6 subsectors	B

475	What is the Rating of LA on 25KV side: (A)32KV (B)25KV (C) 42KV (D) 66K	C
476	What is the Rating of LA on 132KV side: (A)32KV (B)120KV (C) 110KV (D) 66K	B
477	How many BM's are there in TSS ? (A) 2 +1 (B) 3+1 (C) 4+1 (D) 5+1	C
478	Fuse rating of 110V battery charger? (A) 32Amp (B)16 Amp (C) 6 Amp (D) 10 Amp	A
479	What is the Meter that measures both AC &DC Voltages? (A) Megger (B) Volt meter (C) Multi meter (D) Ammeter	C
480	What type of tap changer is used for traction transformer: (A) on load tap changer. (B) off load tap changer. (C) no load tap changer. (D) none of this .	B
481	What is the overall protection provided for TSS Yard equipment from lightening (A) LAs (B) Earthing (C) CBs (D) Earth screen wire.	D
482	What is the type of cooling of 21.6MVA transformer? (A) Oil cooling only (B) Oil Natural ,air cooling (C) Air cooling only (D) Natural cooling only	B
483	What relay will act when Transformer over loaded ? (A)MHO (B)DPR (C) OCR (D) LV side IDMTL	D
484	What happens if CT secondary becomes open circuit: (A)High Voltage in the secondary circuit. (B) Low Voltage in the secondary circuit. (C) No Voltage in the secondary circuit. (D) none of this	A
485	How many times feeder CB's auto recloses under continuous fault condition? (A) One time only (B) Two times (C) Three times (D) Many times	A
486	what relay will act when short circuit across on OHE at Farthest point of feeding zone: (A) MHO Relay (B) OCR Relay(C)DPR Relay (D) PANTO Relay	A
487	what is the Arcing horn gap of AT ? (A) 80+80mm (B) 100+100 mm (C) 90+90mm (D) 70+70 mm	B
488	what is the DC voltage required for un interrupted power supply ? (A) 115Volts (B) 110Volts (C) 100Volts (D) 120Volts	B

489	what is the resistance of a closing coil: (A) 20 ohms (B) 40 ohms (C) 50 ohms (D) 30 ohms	D
490	What type of Motor is used in 132KVCB (or) 25KVCB Mechanism box 110V D.C. Motor? (A) Universal (B) Series (C) Shunt (D) AC motor	B
491	what is the fuse rating of type-II PT ? (A). 1 Amps (B) 2 Amps (C) 3 Amps (D) 4 Amps.	B
492	TSS Transformer Capacity ? (A) 25.6 MVA (B)26.6 MVA (C) 21.6 MVA (D)23.6 MVA	C
493	AMP hour rating of cells of 110V Battery at TSS? (A) 100AH (B) 110 AH (C) 150 AH (D) 200AH	D
494	What is maximum current on secondary side of 10KVA AT? A. 20A B. 40 A C. 60 A D. 10 A	B
495	Double pole isolator current carrying capacity ? A. 200A B. 400A C. 800A D. 600A	C
496	The caution board that should be displayed on Height gauge is ---- A) No caution board shall be displayed. B) Danger Board. C) Power block Working Limit D) Caution Electrified Section.	B
497	Which Tool is used to tackle heavy loads & tensile force A) Discharge Rod. B) Max-Puller C) Grease Gun D) Power Hack Saw.	B
498	The Tool named Pull-Lift is used for? A) To earth OHE. B) POH of ATD C) To hold weight of contact wire. D) Non of the above.	C
499	The tool used to make a perfect gripe on OHE wires is A) Come along Clamp B) Max-Puller C) Pull-Lift D) Rope pulley block	A
500	In case of 25KVAC system, electrical clearance is greater than working clearance. A) True B) False C) Neither True Nor False D) May be True	B
501	The Competency Certificate No. for a OHE Lines man is ---------- A) TR-04 B) TR-02 C) TR-01 D) TR-05	C

502	What is Super Elevation? A) Length of Super Mast. B) Mast more than 9.5mt length. C) The uplift of outer rails on curved tracks. D) Height difference in contact wire at turn-outs.	C
503	The Caution Board that must be displayed on FOB/ROBs – A) Caution 25000 volts. B) DJ opens board C) Lower Panto D) Danger Men working.	A
504	Caution Board applicable at Dead-End OHE termination is – A) Caution OHE ahead is alive. B) Restricted Clearance. C) Electric Engine Stop D) Unwired Turn-Out.	C
505	The elementary section supply is controlled by a A) CB B) BM C) Hand operated off load switch. D) BX	C
506	What is shown in mutually contrast colour in a OHE sectioning diagram? A) Sector B) Sub-Sector C) Elementary Section D) Non of the above.	C
507	Which schedule maintenance has a periodicity of four years.? A) AOH B) IOH C) POH D) None of the above.	C
508	Which schedule maintenance has a periodicity of twelve months? A) AOH B) IOH C) POH D) Non of the above	A
509	Periodicity of Special Check of OHE is – A) 15 days B) 45 days C) 5 years D) No defined periodicity, it depends upon usage and chance of failure of the Equipment.	D
510	Oliver –G is used for – A) Thickness of OHE B) Sag in OHE C) Height and Stagger of OHE. D) None of the above.	D
511	Why it is better to use Oliver-G for Current Collection Test.- A) It can be used in day & night. B) No work man is required. C) Indicates exact spark location D) It is modern and so, is better.	C

512	What probable defects you would suspect to a given insulator? 1) Dirty surface 2) broken sheds 3) Crack 4) Prohibited make & batch 5) Flash 6) loose GI cap. A) 1,3,5 B) 2,4,6 C) 1,2,3,5,6 D) all of these.	D
513	The term Curve Allowance is related with A) Mast Length B) Encumbrance C) Stagger D) Implantation.	D
514	What shall be the difference in insulators being used in ordinary and polluted zones? A) No difference B) load bearing capacity C) design D) Creepage distance.	D
515	What would be the No. of Elementary Section that is controlled by SS/216 – A) It may be any thing B) 21600 C) X-216 D) SS-216	C
516	What do you mean by term OFF Load Switch in reference to Isolator? A) Isolator in yard. B) Maintenance of the Isolator can be done. C) No current through the isolator D) Operation can be done with least effort.	C
517	What is the purpose of Isolator Arcing Horns? A) As Bird scar to prevent the contacts from dirt. B) High Voltage Protection. C) To protect main contacts from sparking while isolator operation. D) To lock the main contacts while isolator is in closed condition.	C
518	In reference to Isolator what the term Pole generally means? A) No. of Phase B) No. of pedestal insulator C) Clearance between fix and moving contacts. D) None of the above.	A
519	What do you mean by earthing heel isolators? A) Isolator mast is connected with an earth electrode. B) Isolator Handel is shorted with mast by a flexible jumper. C) the isolator has two moving contacts. D) The Isolator isolates as well as earth the isolated OHE.	D
520	Which one is reference for ADT? A) 35°C B) 27 °C C) 20 °C D) 30 °C	A
521	Identify from the given that does not indicate the type of a Turn- Out. 1) PTFE type 2) Regulated type 3) Semi-Regulated type 4) Cross- type A) 4, 2 B) 3, 4 C) 1, 2, 3 D) 1, 4	C

522	What is wrong in connection with Neutral Section? A) It isolates supply of two different phases. B) AC engines pass this section by their momentum. C) It is located corresponding to SP switching station. D) It improves power factor. E) None of the above.	D
523	Which one do not requires earth pit? A) Isolator B) PTFE neutral section C) Over line structure D) Over Lap type N/S	D
524	Stagger of PTFE type Neutral Section? A) 0 B) +100 C) -100D) +/- 200	A
525	General tendency of contact wire parting is at A) ACC B) RRA C) FTA D) BWA	B
526	Adjustable Dropper is used for – A) ATD B) RRA C) Section Insulator D) ACA	C
527	Contact Ending Cone is not used at – A) BWA B) FTA C) ACA D) Non of the above.	C
528	To have complete information of the object from drawing – A) Plan is sufficient. B) Plan & Elevation is sufficient. C) Plan, Elevation & End view shall be required. D) None of these.	C
529	Which type of material is classified as per temperature? A) Conductor B) Insulating C) Semi conducting D) Magnetic.	B
530	For a series connected circuit which statement shall be incorrect? a) Current shall be equal to all loads. b) Current through all loads shall be equal but voltage drops shall be different. c) Current shall different to different points of circuit. d) Circuit current shall depend on total resistance of the circuit.	C
531	What is in correct in connection with Ohm's law? a) It states the relation among the voltage, current & resistance in a closed circuit. b) Circuit current is proportional to the voltage imposed. c) Circuit current is inversely proportional to the circuit resistance. d) Temperature has no effect on this relation.	D
532	Magnetic poles are generally known as---------- --. a) North- South b) East- West c) EMF- MMF d) UP-DOWN	A

533	Which one is incorrect to natural magnet? a) Loss of magnetic properties on heating. b) Similar poles repeal and opposite attract each other. c) A magnet attracts all metals. d) Small pieces of a magnet shall also be a magnet.	C
534	When current is flown through the wire, wound on a iron piece ,the iron piece becomes- a) Natural Magnet b) Electro-Magnet c) Steel d) Mild Steel.	B
535	How a Electromagnet differs from a Natural Magnet? a) Number of poles may be arbitrarily chosen. b) Magnetic line of force is reversed. c) Strength of poles depends on size of magnet d) Temporary Magnetism.	D
536	Electromagnetism is not used in ..... a) Compressor motor contactor. b) Battery charger. c) 42 KV LA d) Taret CT	C
537	---------- Works on principle of electromagnetism. a) LA b) Capacitor c) CB d) AT	D
538	According to thermal classification of insulating materials category Y materials are suitable for temperature limit----------. a) 0°C b) 180°C c) 90°C d) 270°C	C
539	According to thermal classification of insulating materials category Y materials are suitable for temperature limit----------. a) Above 0°C, up to 80°C b) Above 0°C, up to 90°C c) Up to 150°C d) Above180°C	D
540	The vital component of a rectifier circuit is? a) Resistor b) Diode c) Capacitor d) Choke Coil	B
541	Normally generation of electrical energy is done in ------phases. a) 1 b) 2 c) 3 d) 4	C

542	ACTM has relation with? a) Maintenance of TRD installations. b) Directives for different departments in electrified section. c) Working of TPC d) All of the above.	D
543	Direction of electric current flow is – a) From high voltage to low voltage. b) Low voltage to high voltage. c) Between two points that's voltage is same. d) There is no such rule.	A
544	Tests that can be done by the same measuring equipment – a) PI / IR b) BDV / DGA c) THRC / IR d) PPM / DGA	A
545	What do you mean by unit consumed in connection with Electric Meter Reading? a) KVA b) KVAR c) KWH d) KA	C
546	What do you mean by Range in context with Megger ? a) Max value of MΩ on scale. b) Voltage. c) RPM of rotating handle. d) Initial value of MΩ on scale.	B
547	Identify the symbol of Infinity. a) MΩ b) & c) ∞ d) °C	C
548	TR-5 Competency Certificate is given to – a) OHE Lines Man b) PSI fitter c) RC artisan d) PSI Supervisor.	B
549	According to TR-2 a Lines Man is not authorized for- a) Work on OHE. b) 25KV isolator operation. c) Switching operation in Switching Station despite of permission granted by TPC. d) Commissioning of new installations.	D

550	TR-5 permits a PSI artisan for – a) Issuing PTW. b) Receiving PTW of EHV lines c) Commissioning of new installations. d) Shutting down 25KV installations according to instructions of TPC.	C
551	Which method of safety is generally not adopted during power block on a SubSector? a) PTW b) Prohibition of AC engines to enter in power block section. c) To tripe Feeder CB. d) Application of Discharge Rods.	C
552	Maximum Permissible distance between two discharge rods is? a) 1 meter b) 10 meter c) 100 meter d) 1000 meter.	D
553	What care should be considered while clamping a discharge rod on a mast? 1. Cable and lug connection. 2. Availability of discharge rod on both sides of the spot. 3. Availability of Structure bond. 4. Distance between consecutive discharges rods. a) 1, 2 b) 2, 3 c) 2, 4 d) all of the above.	D
554	SPG of distilled water is ? a) 1.000 b) 1.180 c) 1.220 d) 2.2 a	A
555	What is true for DC supply and distilled water? a) DC current can not flow through distilled water. b) DC current can flow through distilled water, c) DC current gets stored in distilled water. d) DC gets converted into AC. a	A
556	What you expect from a battery kept on high charging rates for a long time? a) Nothing special. b) Plates may be damaged by getting very hot. c) Change of polarity d) Increased capacity. b	B
557	Electrolyte bubbling heavily, it is a indication of? a) Over charging b) Under charging c) No load d) Discharged	A

558	What are the conditions for better performance of a battery set? 1. Equal cell voltages. 2. Equal AH 3. Equal SPG of Electrolyte. 4. Correct connection. a) 1, 4 b) 3, 4 c) 1, 2, 3 d) all of the above.	D
559	What is incorrect for a 40AH capacity battery? a) 1 ampere for 40 hours b) 40 ampere for 1 hours c) 4 ampere for 10 hours d) A rate of current supply as 40 ampere per hour.	D
560	The transformer oil should be replaced if it turns----------(colour) A) Blue B)Black C) Brown D) Sky Blue	B
561	What is the use of transformer oil? A) Insulation B) Cooling C) Both the above. D) None of the above	C
562	Transformer Oil is categorized as? A) Edible oil B) Fuel C) Insulating oil D) Palm oil	C
563	Which device is used to protect the transformer from excessive internal pressure? A) PRD B) Buchholtz Relay C) MOLG D) Drain Cork.	A
564	What is used for cooling of a transformer? A) Conservator tank B) Radiator C) Breather D) Core	B
565	Transformer Oil is dangerous since it is ----------. A) Inflammable B) Toxic C) Hygroscopic D) Unnatural.	A
566	ONAN / ONAF are the types of – A) Transformer cooling system. B) Winding C) Tap Changer D) Earthing	A
567	What it indicates, if the terminal connection of a transformer appear bad in colour. A) Abnormal heating of terminals due to loose connection B) Transformer Over load C) Higher EPR. D) None of the above.	A
568	Transformer oil sample Crackles on heating ; it is an indication of – A) Increased acid content. B) Too cold sample C) Excessive Water contentD) Improved BDV .	C
569	Oil temperature trip facility is given since at higher temperatures A) Transformer oil becomes thick and immovable. B) Insulating properties of insulations impair sharply. C) Buchholtz relay trips. D) It becomes difficult to operate tap changer due thicken transformer oil.	B
570	What is incorrect in context of Buchholtz Relay? A) It is an electromechanical relay. B) It protects transformer from internal faults. C) It requires collection of gas to operate. D) It is situated between bell tank and conservator tank.	A
571	In case of transformer bushing ,the value of tan-δ testing should not be more than ----- A) 0.008 C)0.009 C) 0.007 D) 0.010	C

572	During maintenance, it is found that oil level in OIP Condenser bushing is low from the set value what action should be taken? A) Transformer can be taken on load. B) Bushing shall be replaced. C) On lowest tap transformer can be taken on load. D) Tan-δ and Capacitance test shall be done and action shall be taken according to results.	D
573	No need to reset OTI/WTI during----------scheduled maintenance. A) MonthlyB) Half Yearly C) Yearly D) None of the above.	D
574	OTI indicates? A) Average temperature of transformer oil. B) Maximum temperature of transformer oil. C) Minimum Temperature of Transformer oil D) Maximum permissible temperature of transformer oil	B
575	WTI indicates? A) Average Temperature of transformer winding. B) Maximum temperature of transformer winding. C) Minimum temperature of transformer winding. D) Maximum permissible temperature of transformer winding.	B
576	According to TI/MI -38 what action shall not necessarily be done during monthly maintenance? A) EPR testing B) Inspection of Slica gel breather. C) Check OTI/WTI D) To check bus bar connection for bad -colour.	A
577	Which Instrument is used for PI checking? A) Ammeter, Voltmeter, Watt meter B) Earth Tester C) Megger D) BDV Tester.	C
578	Winding is said in good health ,if the value of Polarization Index is A) Less than 1 B) More than 2 C) Value of Polarization Index does not indicate winding condition. D) More than 1, less than 2.	B
579	Unit for measurement of Polarization Index. A) Volt per second B) Mega -Ohms per second C) Volt per rotation D) there is no unit.	D
580	During half yearly maintenance ,oil sample for BDV test should be taken – A) Just after shutting down the transformer. B) After cooling of transformer oil. C) After keeping the transformer at 5 No. Tap for half an hour. D) Sample bottle should be filled by taking small quantities over a considerable time during the maintenance.	A
581	The symbols R60/R10 and R600/R60 bear the relation with---------- . A) BDV B) PPM C) tan-δ D) Polarization Index.	D

582	What does it mean by R60/R10 in relation with PI? A) Resistance of 60Ω and 10Ω. B) Megger readings after 10 sec. and 60 sec. respectively . C) Megger readings after 10 sec. and 60 sec when rotation of handle has been stopped. D) Non of the above.	B
583	According to TI/MI 38, what action should be taken if the value of PI test is less than 1.1 . A) Replace transformer oil. B) Transformer is in good condition. C) Oil filtration and again PI test. D) TI/MI38 do not say any thing about PI test.	C
584	Which test is not performed on transformer oil? A) IR B) DGA C) BDV D) PPM	A
585	---------- Test is done to test Electrical Strength of transformer oil. A) IR B) DGA C) BDV D) PPM	C
586	Which test should be done to know water quantity present in oil sample? A) Crackle Test B) PPM C) Colour Test D) Tan-δ Test.	B
587	Factor that affects insulation resistance? A) Size of winding B) Temperature C) Moisture D) All of the above.	D
588	While meggering a transformer ,---------- temperature should also be recorded along with the megger reading. A) Air B) MOLG C) OTI D) a & c	C
589	While meggering ,what should also be recorded on the test record along with megger reading? A) Megger Rating. B) Make & Serial Number C) Air & OTI D) All of the above.	D
590	What is incorrect about Oil filtration? A) Initially IR falls with rise of temperature. B) With filtering out dirt and moisture BDV improves. C) Oil filtration do not permits dissolved gases to escape out from oil. D) IR value increases with fall of oil temperature when filtration plant is shut-off.	C
591	Which test shall not be done for OIP condenser bushing during yearly maintenance? A) tan-δ B) CapacitanceC) IR D) Crackle	D
592	Generally spark gap for 25KV bushing of traction transformer is A) 16.5 cm B) 25 cm C) 75 cm D) 1mt.	B
593	On selection of higher taps of a tap-changer voltage increases since A) No. of turns in winding increases. B) Winding resistance reduces. C) Insulation resistance of winding reduces D) Incoming voltage to winding increases.	A
594	Bushing CT is associated with? A) Power Transformer B) AT- 100KVA C) AT at SP D) Feeder CB	A
595	Location of PRD? A) Behind control panel B) below marshaling box C) Above bell tank D) beside conservator tank.	C

596	What is common among TPI, DPI, SPI and BPI? A) A CB is connected to all of them. B) All of them is used for transformer isolation. C) All are located in a FP. D) Each of them is a type of isolator.	D
597	Out of the following, what is not the type operating mechanism of a CB or BM? A) Air open/ Air Close B) Spring open / spring close C) Air open / spring close. D) ONAN / ONAF	D
598	What is not compulsory for maintenance of CB / BM? A) To obtain PTW from TPC. B) To open SPI/DPI from both sides. C) To keep switch gear on local control. D) None of the above.	D
599	Function of Gas Density switch is – A) to check purity of SF6 gas. B) to control total break time . C) to generate signal according to gas pressure in pole unit. D) None of the above	C
600	Earthing for RCE should not be connected with earthing of switching ,because A) Traction current may harm to RCE equipments. B) RCE equipments work on DC supply. C) There is no such restriction. D) Earthing may not be connected	A
601	The abnormal conditions ,LA protects from, is --- A) Short circuit B) Open circuit C) Low voltage D) Voltage surge.	D
602	In a TSS, voltage ratio of 100KVA AT is --- A) 100KV /230 volt B) 100KV/440 volt C) 25KV/230 volt D) 25KV/ 440volt.	C
603	Catenary indication is a must for Closing Operation of ---------- A) Doors of control penal of TSS. B) Sectioning BM of SSP C) HV CB D) Bridging BM.	D
604	At voltage ,lesser than 19 KV – A) Bridging BM gets open, if already closed. B) Air compressor of CB gets stop. C) HV/LV CB trips D) Non of the above	A
605	On a SSP over lap, which side of OHE gets parallel by the paralleling BM of that SSP? A) TSS B) SP C) middle D) both side	B

606	Bus –bar connection gets bad in colour, what it indicates for? A) Bus Bar is getting hot due to bad connection. B) Connection is alright and bus bar do not getting hot. C) General climatic effect on bus-bar. D) Poor quality of bus- bar material.	A
607	Bus-bar connection should be opened, cleaned and retighten if – A) CB trips on WTI indication. B) Pre-monsoon is being done. C) Bus –bar is bad in colour. D) None of the above.	C
608	To deduce average PF of a TSS over a month, what items of meter reading of that TSS for the month shall be used? A) KVAH, KVARH B) KVAH, KWH C) KVA, KVAR D) KVA, KW.	D
609	What is meant from Earth-Screen, in context of a TSS? A) Under Ground earth-grid. B) Earthed fencing around TSS. C) A caution –board. D) Earth wire hanging on TSS gantry.	D
610	Under voltage relay is related with – A) All BM of TSS B) Paralleling BM of SP and SSP. C) Sectioning BM of SSP D) Bridging BM of SP.	D
611	In a Traction Transformer ,Bushing CT is used for – A) OCR B) DPR C) EFR D) DFR	D
612	For a 132KV/25kV traction transformer, how many CT are required to Differential Protection? A) 2 No LV taret CT B) 2No. HV taret CT C) HV Gantry-CT, LV taret CT D) HV and LV taret CT	D
613	Differential protection works against which type of fault? A) Internal faults B) Over voltage C) Over current D) Low oil level.	A

614	OCR –T is protection from? A) Sustained over Currents due to over load. B) Sudden rise of current due to earth fault. C) Over current due to earth fault away from TSS. D) Sudden rise of current by 200% of normal current due to any reason.	A
615	DPR is Protection from? A) Sustained over Currents due to over load. B) Sudden rise of current due to earth fault. C) Earth fault away from TSS. D) Sudden rise of current by 200% of normal current due to any reason.	C
616	Which relay gets its input from both the CT and PT? A) OCR B) DPR C) EFR D) DFR	B
617	What would you do, if you want to change the tripping current of a CB? A) It might not be done; the CB would have been replaced. B) CT would have been replaced. C) Relay setting should be adjusted. D) Battery voltage should be changed.	C
618	What is correct about WPC relay? A) One No in SP B) two No. in SP C) one No. in TSS D) two No. in TSS	D
619	Earth –Screen is a protection against – A) Touch Voltage B) Step Voltage C) Lightening Stroke D) Earth Fault.	C
620	CTD is an interlock arrangement – A) It is a false statement B) CB tripping and 110 volt DC supply C) CB tripping and auto recloser. D) High voltage and alarm.	B
621	OCR-I is a protection against – A) Sustained over Currents due to over load. B) Sudden rise of current due to earth fault. C) Over current due to earth fault away from TSS. D) Sudden rise of current by 200% of normal current due to any reason.	D
622	It is not the auto –reset type relay A) OCR B) DPR C) WPC D) ITR	D
623	100KVA AT of TSS is used for A) Yard Lighting B) Stand by C) Filtration Plant D) Power Factor correction.	C

624	The secondary winding of a CT should not be open circuited if primary is charged A) There is no such restriction. B) Primary becomes Over-Voltage C) CT winding will burn –out. D) CB can not be closed	C
625	Most suited place for cable storage is – A) Moist and Dark B) Moist and Sun light C) Dry and dark D) Dry and Sun light.	C
626	Cable laying should be done in cable trenches ;due to A) Ease of maintenance. B) Mechanical protection C) Eases of identification during maintenance. D) all of the above.	D
627	While storing cables ,its ends should be properly covered by something like plastic etc.- A) It is of no use. B) Such action is wrong. C) It must be done. D) It is sufficient to cover only one end.	C
628	What you understand about size of a cable if it is said 70 Sq mm two core cable A) Cross sectional area of the cable is 70 sq mm. B) Size of each core is 70 sq mm C) Size of one core is 35 sq mm D) Cable is to be used for CLS purposes.	B
629	Cable size of discharge –rod used in 25KV OHE is – A) Multi-core 40 sq. mm B) Single Core 40 sq. mm C) Multi-core 20 sq. mm D) Single Core 20 sq. mm	B
630	To crimp a lug properly on the cable core, how many strands are permitted to cut? A) 0 B) 1 C) 2 D) 3	A
631	The insulation resistance of a cable depends on – A) Condition of insulation B) length C) Thickness of insulation D) all of the above.	D
632	Hand tool used to put the lug on cable core tightly is – A) Torque Wrench B) Ring Spanner C) Crimping tool D) LN key	C
633	---------- is used for low oil level protection. A)LOLG B)MOLG C) MOMG D) LOMG	B
634	Maximum distance between two Discharge Rods ---------- **A)1000mts. B) 1200mts C)1300mts D) 1400mts**	A

635	Discharge Rods should generally be placed at a maximum permissible distance from the work spot. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
636	Is it compulsory to test the line dead by a slight touch of discharge rod at Resister tube prior to placement of discharge rod on OHE wires? **A)Yes. B)No C)Neither YES or NO D)May not be correct**	A
637	Expand – PTW-..... **A)Possible time to wait B) Periodical time to watch** **C)Permit to work D)Principles to work**	C
638	Broad Gauge of Railway is ---------- mm. **A)1686 B)1690 C)1676 D)1695**	C
639	The minimum permissible OHE voltage at SP is ---------- KV. **A) 20KV B)21KV C)22KV D)19KV**	D
640	Cable size of OHE Discharge rod is----------sq.mm. **A) 40 B)30 C)35 D)25**	A
641	The safe working distance for 25KV AC OHE is ---------- --. **A) 1mtr B) 2mtrs C)1.5mtr D) 0.75mtr**	B
642	The DJ open caution board comes after the Neutral Section **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
643	Height of Height Gauge at LC gate is----------. **A) 4.78mts** **B) 4.82mts** **C) 4.48mts** **D) 4.67 mts.**	D
644	Height Gauge is used at---------- --. **A) At Station** **B) At Yard** **C) Level Crossing.**	C
645	Armor is meant for mechanical protection of the cable.(true/false) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
646	There is a fuse in the secondary of the CT. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
647	There is a fuse in the secondary of the PT. (true/false) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
648	Sometimes, there is only secondary winding in CT. (true/false) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
649	DO fuse is protection for ----------. (OHE , AT) A. OHE B.CB C.AT D.Isolator	C
650	Can DO-fuse be used for protection of CT. (Yes/ No) **A)Yes. B)No C)Neither YES or NO D)May not be correct**	B

651	230 volt AT winding should be meggered from 500 volt megger. (true/false) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
652	Size means length of the cable used for. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
653	To protect the cable from the effects of moisture its free ends should be covered by something like plastic etc. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
654	What is used to indicate the position of under ground cable?---------- A. Spike B. Name board C. Route Indicter/ Cable Marker D. Cabke chart	C
655	Rating of PT normally used for catenary indication is ---------- --. A) 25KV/100 volts E) 25KV/220volts F) 25KV/440volts G) 132KV/100volts	A
656	DO fuse rating for 10 KVA AT is ----------. A) 2 amp B) 1 amp C) 3 amp D) 4 amp	B
657	Within a TSS, the minimum height of 25KV bus-bar from ground level is --------- --. A) 4.20mts B) 4.10mts C) 3.80mts D) 3.90mts	C
658	LA is connected between line and earth. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
659	In three phase system (132 KV) , LA is connected between any two phases. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
660	Rating of KIT- KAT fuse for 10KVA AT is ----------. A) 63 amp B) 80 amp C) 85amp D) 75 amp	A
661	Minimum permissible Megger value between HT- E for a CT is---------- MΩ A) 100MΩ B) 200 MΩ C) 150 MΩ D)175MΩ	B
662	Minimum permissible Megger value between LT- E for a CT is---------- MΩ A) 1 MΩ B) 1.5 MΩ C) 2 MΩ D) 0.75 MΩ	C

663	Minimum permissible Megger value between HT- LT for a CT is ---------- MΩ A) 100 MΩ B) 150 MΩ C) 175 MΩ D) 200 MΩ	D
664	Minimum permissible Megger value between HT- E for a PT is---------- MΩ A) 100 MΩ B) 150 MΩ C) 175 MΩ D) 200 MΩ	D
665	Minimum permissible Megger value between LT- E for a PT is---------- MΩ A) 2 Ω B) 15 MΩ C) 2 MΩ D) 500 Ω	C
666	Minimum permissible Megger value between HT- LT for a PT is---------- MΩ A) 100 MΩ B) 150 MΩ C) 175 MΩ D) 200 MΩ	D
667	Minimum permissible Megger value between HT- E for a AT is---------- MΩ A) 100 MΩ B) 150 MΩ C) 175 MΩ D) 200 MΩ	D
668	Minimum permissible Megger value between LT- E for a AT is---------- MΩ A) 2 Ω B) 15 MΩ C) 2 MΩ D) 500 Ω	
669	Minimum permissible Megger value between HT- LT for a AT is---------- MΩ A) 100 MΩ B) 150 MΩ C) 175 MΩ D) 200 MΩ	D
670	In case of CT, number of turns in primary is ------- than number of turns in secondary. A) More B) Equal C) Less D) cannot be told	C
671	In case of PT number of turns in primary is ------- than number of turns in secondary. A) More B) Equal C) Less D) cannot be told	A
672	Is it necessary to check the transformer before putting on load if it was out from circuit due to Differential relay? **A)Yes. B)No C)Neither YES or NO D)May not be correct**	A
673	Voltage ratio of PT type I---------- --. A) 132KV/100volts B) 25kv/100 volts C) 25KV/230volts D) 11KV/100volts	B

674	Voltage ratio of PT type II ---------- --. A) 132KV/100volts B) 25kv/110 volts C) 25KV/230volts D) 11KV/100volts	B
675	KVA rating of AT normally used for CLS is----------. A) 25KVA B) 50KVA C) 10KVA D) 75KVA	C
676	Voltage ration of AT normally used for CLS is----------. A) 132KV/100volts B) 25kv/110 volts C) 25KV/230volts D) 11KV/100volts	C
677	Rating of AT normally used in SP/SSP is ----------KVA A) 25KVA B) 50KVA C) 10KVA D) 75KVA	C
678	----------No of ATs used in TSS. A) 2 B) 1 C) 3 D) 4	A
679	ITR is a fault sensing relay. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
680	ITR is a auxiliary relay for transformer protection. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
681	WPC relay is placed in SP. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
682	WPC relay is placed in TSS. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
683	Delta-I relay is said as back-up to DPR. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
684	Every type of CB is having the facility to alter the setting of its tripping current. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
685	Air pressure alarm, for 25KV CB/BM, operates at ---------- --. A) 15Kg/cm^2 B) 17Kg/cm^2 C) 13 Kg/cm^2 D) 18Kg/cm^2	C

686	A layer of ballast, used in switch-yard, serves as insulation. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
687	SF6 gas is A) Inert gas B) Insulator C)Cooling property D) All of these	**D**
688	LA may be tested from Megger. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
689	Prior to erection, LA should be tested from----------. A) Tong Tester B) Ammeter C) Tacho generator D) Megger	**D**
690	POH of LA should be done after 4 years. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**B**
691	There is no POH schedule for LA. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
692	42KV LA should be Meggered by 500 volt megger. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**B**
693	Megger value for 42KV LA should be? A) 10MΩ B) 100MΩ C) 1GΩ D) 200MΩ	**C**
694	548. Megger value for 198KV LA should be? (2500MΩ , 1GΩ , 10GΩ, 200KΩ) A) 2500MΩ B) 1GΩ C) 10GΩ D) 200KΩ	**C**
695	Control circuits for sw1itching stations works on ---------- volts. A) 230V AC B) 150VDC C) 200V AC D) 110V DC	**D**
696	LA rating for 25KV system is----------. A) 120KV B) 42KV C) 198KV D) 98KV	**B**
697	LA rating for 110KV system is ----------. A) 120KV B) 42KV C) 198KV D) 98KV	**D**
698	LA rating for 132KV system is ----------. A) 120KV B) 42KV C) 198KV D) 98KV	**A**
699	LA rating for 220KV system is---------- . A) 120KV B) 42KV C) 198KV D) 98KV	**C**
700	---------- is used to check gas pressure in pole-unit. () A) Gas Density switch B) Gas pressure gauge C) Compressor D)Valve gauge	**A**
701	Normal working air pressure for 25KV CB/BM is ----------. A) 20Kg/cm² B) 15 Kg/cm² C)25 Kg/cm² D) 18 Kg/cm2	**B**

702	25KV CB/BM locks out due to low air pressure at ---------- A) 12 Kg/cm² B) 15Kg/Cm² C) 20Kg/cm² D) 25Kg/cm²	A
703	In a 25KV CB/BM air pressure is maintained by ---------- A) Compressor B) Air pressure limit switch C) Safety valve D) TPC	B
704	In 25KV CB/BM, ---------- is used for safety of Air Cylinder. A) Float valve B) Diaphram Valve C) Safety Valve D) Gate Valve	C
705	----------°C is taken as Standard for determination of Gas Pressure in 25KV CB/BM. A) 25 B) 30 C) 20 D) 40	C
706	Only a competent railway servant can operate the 25KV Isolator switch. (True/False) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
707	Operation of 25KV Isolator switch is permitted to all railway servants. (True/False) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
708	In open state ,the clearance between fix and moving contact of an 25KV Isolator should be 500mm. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
709	In open state ,the clearance between fix and moving contact of an 132KV Isolator should be more than 500mm. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
710	On-Load operation of an 25 KV isolator switch should not be done. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
711	An elementary section can be isolated by isolator switch. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
712	Nitorgen Gas is filled in the pole unit of Vacuum type CB. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
713	Any type of Gas or Air is not filled in the pole unit of Vacuum type CB/BM. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
714	Total Break time of 25KV single pole SF6 Circuit Breaker should not be more than 65 milli-seconds. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
715	Total Break time of 25KV single pole SF6 BM should not be more than 80 Mili-seconds. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
716	In no condition SF6 gas can convert into liquid state. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B

717	At some specific high pressure and low temperature, SF6 gas converts into liquid state **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
718	PTW must be obtained from TPC for the maintenance of CB/BM. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
719	It is safe to keep the CB/BM on local control while its maintenance is in progress. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
720	It is safe to switch off 110 volt DC supply of CB/BM while its maintenance is in progress. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
721	Gas density switch generates alarm according to gas pressure in the pole unit. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
722	521. It is impossible to check the settings of gas density switch. (True/False) **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
723	Combined earth pit resistance of a TSS should not be more than ---------- Ω. A) 10 Ω B) 2 Ω C) 0.5Ω D)1 Ω	C
724	Combined earth pit resistance of a SSP should not be more than ---------- Ω. A) 10 Ω B) 2 Ω C) 0.5Ω D)1 Ω	B
725	Combined earth pit resistance of a SP should not be more than ---------- Ω. A) 10 Ω B) 2 Ω C) 0.5Ω D)1 Ω	B
726	Single earth-pit resistance should not be more than ----------. A) 10 Ω B) 2 Ω C) 0.5Ω D)1 Ω	A
727	The ideal value of EPR would be----------. A)1 Ω B)0 Ω C)2 Ω D) 3 Ω	B
728	As per ACTM, earth electrodes should be ---------- meters long. A) 1 B) 2 C) 3 D) 4	D
729	As per ACTM, bore of earth electrodes should be ----------cm. A) 4 B) 2 C) 1 D)3	A
730	As per ACTM, minimum separation between two earth pits is----------mt A) 1 B) 5 C) 6 D) 4	C
731	Treatment by mixture of salt-charcoal should be done if the EPR is less than 10Ω. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
732	Treatment by mixture of salt-charcoal should be done if the EPR is more than 10Ω. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A

733	It is good to pour water in earth pit at a regular interval. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
734	Over a year, EPR should be checked during dry and hot season. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
735	In a switching station, all earth electrodes are connected in---------- connection. (series/parallel) A) Parallel B) Series C) both Series /parallel D) Single	A
736	Earth pit for remote control equipment should not be connected with earth pits/ earth grid of switching station. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
737	When 25KV isolator is in opened condition, what should be the clearance between its fixed and moving contact? A) 400mm B) 300mm C) 200mm D) 500mm	D
738	Code ---------- is prefixed before number of isolator connected with main line OHE. A) SS B) CB C) SM D) BM	C
739	Out of the following, what is not there in the pole unit of CB/BM? A) Fix and Moving Contact. B) Arc quenching medium. C) Main and Arcing Contact. D) Auxiliary contact.	D
740	Normally gas pressure in SF6 type CB/BM is maintained at ----------, A) 5.5 Kg/cm^2 B) 4.5 Kg/cm^2 C) 4.0 Kg/cm^2 D) 3.5Kg/cm^2	A
741	Low gas pressure alarm operates at ---------- kg/cm^2 for SF6 CB/BM ,where normal gas pressure is 5 Kg/cm^2 A) 5.5 Kg/cm^2 B) 4.5 Kg/cm^2 C) 4.0 Kg/cm^2 D) 3.5Kg/cm^2	B
742	495. SF6 CB/BM(5Kg/cm^2) locks-out at low gas pressure of ---------- kg/cm^2. A) 5.5 Kg/cm^2 B) 4.5 Kg/cm^2 C) 4.0 Kg/cm^2 D) 3.5Kg/cm^2	C
743	Which component of SF6 CB/BM generates low gas pressure alarm/lock-out signals? A) Compressor B) Gas Density switch C) Gas pressure Gauge D) Valve switch	B
744	Is it true that in the course of usage, acid forms naturally in transformer oil? A) Yes B)No C) Yes (or) No B) may not be	A

745	Is transformer oil a inflammable liquid? A) Yes B)No C) Yes (or) No B) may not be	A
746	Capacity of a transformer is expressed in KW. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
747	Buchholtz relay is oil pressure relay. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
748	Transformer capacity is expressed in KVA. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
749	BDV value of transformer oil should not be less than 60KV. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
750	BDV value of transformer oil should not be more than 60KV. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
751	In a TSS, concrete wall between both the transformers is known as Baffel –Wall. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
752	Transformer oil is a mineral-oil used as fuel. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
753	Synthetic oils can also be used as Transformer –Oil. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
754	Sampling of transformer oil should be done in dry, hot and clear atmosphere. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
755	PRD is used to protect the transformer from high internal pressure. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
756	Drain Cork is used to protect the transformer from high internal pressure. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
757	In context of transformer, copper loss means wear & tear of winding. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B

758	In context of transformer, Iron-loss means wear & tear of Core. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
759	Step-up transformer increases voltage. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
760	Step-down transformer reduces electrical power. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
761	Transformer is a device which bridges high and low voltage circuits. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
762	Periodicity of POH of Power transformer is 4 years. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
763	New transformer oil is clear and transparent in colour. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
764	Out put voltage of a transformer can be controlled by tap-changer. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
765	There is no relation between turn ratio and voltage ratio of a transformer. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
766	Transformers may also be classified on number of phases. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
767	In case of Auto transformer, both the primary and secondary terminals are connected with the same winding. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
768	A transformer works only in one direction that is , imposing voltage to primary voltage appears on secondary terminals but imposing voltage to secondary no voltage appears on primary terminals. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B

769	Transformer work in both directions, i.e. primary to secondary and vice-versa. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
770	Transformer work in both directions, i.e. primary to secondary and vice-versa. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
771	If an ONAN transformer is turned to ONAF, its capacity improves. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
772	Normally HT bushing is oil filled type. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
773	HT bushing is always shield type. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
774	On BDV test, if the results are less than the standard one, oil filtration should be done. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
775	It indicates some thing abnormal if there is considerable rise in readings of OTI/WTI from that of last readings. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
776	That actions are not required during the half yearly maintenance which are done in monthly maintenance. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
777	Before meggering it is compulsory to make the bushing free from dust and moisture. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
778	In case of single phase traction transformer, it is not compulsory to open terminal connections prior to meggering of the transformer. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
779	Tan –δ test indicates the quality of the insulating material. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A

780	For transformer bushing, value of tan-δ should not be less than 0.007. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
781	Capacitance value for transformer bushing should not be less than 110% of factory set value. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
782	CB controls the supply of---------- -. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	B
783	BM controls the supply of---------- -. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	A
784	Isolator controls the supply of----------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	D
785	On faults ---------- trips automatically. A) CB B) BM C) OHE D) PT-II	A
786	OFF load hand operated switch is well known as ---------- A) CB B) BM C) MCB D) Isolator	D
787	What is not controlled by TPC through remote control? A) CB B) BM C) DPI D) None of these	C
788	Electrode gap of BDV tester is----------mm. A) 1 B)1.5 C) 2 D)2.5	D
789	Bushing CT is provided with all bushings of a power transformer. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
790	Crackle Test is done to deduce the water quantity in oil sample. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
791	To megger Traction Transformer 500 volt megger is suitable. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
792	Buccholtz relay operates on current ? **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B

793	Traffic hauled by Diesel Power may be permitted into the section under Power Block. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
794	TI/MI is issued by RDSO. (True/False) 18. Discharge Rods is a safety item. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
795	Fire Extinguisher suitable for an electrical fire/ fire in live electrical equipment? **A) CO2 B) DCP C) Both A & B D) Water**	C
796	IR value for an OHE elementary section? A) **30 MΩ B) 25MΩ C) 35 MΩ D) 40 MΩ**	B
797	Track Protection should be done as per G&SR rule No.----------. **A) 15.09 (1) b B) 16.09(1)b C) 14.09 (1) b D) 16.59(1)b**	A
798	Expand – ACTM-..... **A) Alternating Current Traction Method** **B) Alternating Current Traction Manual.** **C) Alert & Control Track Man** **D) Always Control Tension Mainly**	B
799	1 Tone = ... Kg. **A) 1000 B) 100 C) 1100 D) 1150**	A
800	Codel Life of a Detonator----------. **A) 4 B)5 C) 7 D) 6**	C
801	The section between a TSS and SP is called as ----------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	B
802	The section between a TSS and SSP is called as ----------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	A
803	The section between a SSP and SP is called as ----------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	A
804	As per ACTM the section that's supply is controlled by a CB is called as---------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	B
805	As per ACTM the section that's supply is controlled by a BM is called as---------. A) Sub-Sector B) Sector C) Sub- parallel sector D) Elementary section	A

806	According to ACTM ; fire is classified into---------- categories. **A) 4 B) 3 C) 2 D)1**	**A**
807	Inflammable liquids like Transformer oil is categorized as group ---------- fire. **A) C B) D C) B D) A**	**C**
808	Schedule maintenance Foot Patrolling of a section is done by a Lines Man at an interval of 10 to 15 days. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
809	The re-tensioning of un-regulated OHE is done at an interval of ---------years. **A) 2 B) 1 C) 3 D) 4**	**A**
810	The power loss that occurs in transformer winding is called as----------. A) Iron Loss B) Mica Loss C) Oil Loss D) Copper loss	**D**
811	The power loss that occurs in transformer core is called as----------. A) Iron Loss B) Mica Loss C) Oil Loss D) Copper loss	**A**
812	The ratio of rated voltage of primary and secondary winding of a transformer is called as ----------. A) Voltage ratio B) Transformation ratio C) Both A & B D) Power Ratio	**C**
813	For a transformer, the product of primary side voltage and current is equal to product of secondary side voltage and Secondary side current **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
814	---------- is the unit to express moisture content in transformer oil. A) mg B) g C) Kg D) ppm	**D**
815	POH of Power Transformer is done after----------.years. A) 15 B) 10 C) 8 D) 12	**B**
816	Insulation Resistance between LV and E at 30°C for a 132KV / 25KV transformer should not be less than ---------- . A) 400MΩ B) 2000MΩ C) 2500 MΩ D) 1500MΩ	**A**
817	Insulation Resistance between HV and E at 30°C for a 132KV / 25KV transformer should not be less than ----------. A) 400MΩ B) 2000MΩ C) 2500 MΩ D) 1500MΩ	**B**
818	Insulation Resistance between LV and HV at 30°C for a 132KV / 25KV transformer should not be less than ----------. A) 400MΩ B) 2000MΩ C) 2500 MΩ D) 1500MΩ	**C**

819	Traction Transformer can be run for ---------- minutes at 50% over load. A) 15 B) 20 C) 25 D) 30	A
820	Traction Transformer can be run for 15 minutes at ---------- % over load. A) 50 B) 60 C) 65 D) 70	A
821	Traction Transformer can be run for ---------- minutes at 100% over load. A) 15 B) 5 C) 10 D) 20	B
822	Traction Transformer can be run for 5 minutes at ---------- % over load. A) 150 B) 125 C) 100 D) 140	C
823	Setting for oil temperature alarm is---------- °C. A) 80 B) 85 C) 90 D) 100	A
824	Setting for oil temperature trip is---------- °C. A) 80 B) 85 C) 90 D) 100	B
825	Setting for winding temperature alarm is---------- °C. A) 80 B) 85 C) 90 D) 100	C
826	Setting for winding temperature trip is---------- °C. A) 80 B) 85 C) 90 D) 100	D
827	Traction Transformer is normally equipped with ---------- tap changer. A) On Load B) Off load C) Parial Load D) Full Load	B
828	The ratio of number of turns in primary and secondary winding of a transformer is called as ----------. A) Turn Ratio B) Transformation Ratio C) Voltage Ratio D) Either of these	D
829	In case of transformer bushing ,the value of capacitance should not be more than ---% A) 110 B) 120 C) 130 D) 140	A
830	DGA testing is a test of dissolved ---------- in transformer oil. A) Gases B) Liquid C) Moisture D) Sediments	A
831	Out of the following relations , what would be incorrect for a transformer where N indicates number of turns, V voltage and I current. A) V1/V2=N1/N2 B) V2/V1=I1/I2 C) I1/I2=N2/N1 D) V1/V2=N2/N1	D

832	All types of cells can be used repeatedly by repeated charging. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
833	Primary cells can not be recharged after getting discharged. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
834	Secondary cells can not be recharged after getting discharged. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
835	DC supply source is required for charging a cell. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
836	A cell can be charged through AC supply. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
837	Electrolyte is an example of insulating material. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
838	Electrolyte is an example of conducting material. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
839	The Electrolyte of Lead-Acid battery is of acidic nature. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
840	The Electrolyte of Lead –Acid Battery is of basic nature. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
841	Distilled water is of Neutral Nature. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
842	To prepare the electrolyte one part sulfuric acid is mixed with three or four part of distilled water. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A
843	To prepare the electrolyte one part sulfuric acid is mixed with three or four part of ordinary water. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	B
844	Battery capacity may be stated as KW. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	A

845	The voltage increases and the capacity remain constant, if the cells are connected in series. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
846	The voltage increases and the capacity remain constant, if the cells are connected in parallel. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**B**
847	The capacity of cell increases with increase of its size. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
848	The Voltage increases with increase of the size of cell. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**B**
849	To connect positive terminal with the positive one, shall be a parallel connection. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**A**
850	To connect positive terminal with a negative one, shall be a parallel connection. **A.True B.False. C. Neither True Nor False D. May be TRUE or FALSE**	**B**

PART-B (Basics of Electrical engineering) (MODEL QUESTION BANK BEING ENLCOSED. IT IS INDICATIVE IN NATURE)

A) ELECTRICAL ENGINEERING BASICS OBJECTIVE QUESTIONS WITH ANSWERS

[1] Squirrel cage bars placed in the rotor pole faces of an alternator help reduce hunting
(A) Above synchronous speed only (B) Below synchronous speed only (C) Above and below synchronous speeds both (D) None of the above
Ans: C

[2] The stationary alternator should not be connected to live bus-bars because it
(A) -Is likely to run as synchronous motor (B) Will get short – circuited
(C) Will decrease bus - bar voltage though momentarily (D) Will disturb generated emf's of other alternators connected in parallel.
Ans:B

[3] With a unity load p.f. the effect of armature reaction on the main field flux of an alternator is
(A) Distortional (B) Magnetising (C) Demagnetising (D) Nominal
Ans: A

[4] At lagging loads, armature reaction in an alternator is
(A) -Cross-magnetising (B) –Demagnetising (C) -Non-effective (D) -Magnetising
Ans: D

[5] The frequency of voltage generated by an alternator having 4 poles and rotating at 180rpm is
(A) 6Hz (B) 7200-Hz (C) 120-Hz (D) 450-Hz
Ans: A

[6] The main disadvantages of using short pitch winding in alternators is that it
(A) Reduces harmonics in the generated voltage
(B) Reduces the total voltage around the armature coils
(C) Produces asymmetry in the three phase windings
(D) Increases Cu of end connections.
Ans:B

[7] Zero power factor method of an alternator is used to find its
(A) Efficiency (B) Voltage regulation (C) Armature resistance (D) Synchronous impedance
Ans: B

[8] Armature reaction in an alternator mainly affects
(A) Rotor speed (B) Terminal voltage per phase
(C) Frequency of armature current (D) Generated voltage per phase
Ans: D

[9] The effect of increasing air gap length in the induction motor will increase the
(A) Power factor (B) Speed (C) Magnetising current (D) Air gap flux
Ans: C

[10] The principle of operation of a 3 phase induction motor is most similar to that of a
(A) Synchronous motor (B) Repulsion start induction motor
(C) Transformer with a shorted secondary (D) Capacitor start, induction run motor
Ans: C

[11] Electrostatics is a branch of electricity concerned with
(A) Energy flowing across a gap between conductors (B) Charges at rest
(C) Charges in motion (D) Energy in the form of charges
Answer: B

MULTIPLE CHOICE QUESTIONS ANSWERS ON TRANSFORMERS

OBJECTIVE QUESTIONS WITH ANSWERS:

[1] High frequency transformers sometimes make use of ferrite cores because it has
A. High specific gravity B. High resistance C. High hysteresis D. low permeability
Ans: B

[2] Harmonics in transformer result in
A. Increased core losses B. Increased I^2R losses C. Magnetic interference with communication circuits
D. All of the above
Ans: D

[3] The full load copper loss of a transformer is 1600W. At half-load the copper loss will be
A. 6400W B. 1600W C. 800W D. 400W Ans: D

[4] Power transformers are generally designed to have maximum efficiency around
A. No load B. Half load C. Near full load D. 10% overload Ans: C

[5] Two transformers are connected in parallel. These transformers do not have equal percentage impedance which results
A. Short-circuiting of the secondaries
B. Power factor of one of the transformers is leading while that of the other lagging
C. Transformers having higher copper losses will have negligible core losses
D. Loading of the transformers not in proportion to their kVA ratings.
Ans: D

[6] The changes in volume of transformer cooling oil due to variation of atmospeheric-temperature during day and night is taken care of by which part of transformer?
A. Conservator B. Breather C. Bushings D. Buchholz relay
Ans: A

[7] The transformer laminations are-insulated from each other by
A. Mica strip B. Thin coat of varnish C. Paper D. Any of the above
Ans:B

[8] Which type of winding is used in 3 phase shell type transformer?
A. Circular type B. Sandwich type C. Cylindrical type D. Rectangular type
Ans: B

[9] During open circuit test of a transformer
A. Primary is supplied rated voltage B. Primary is supplied full load current
C. Primary is supplied current at reduced voltage D. Primary is supplied rated kVA
Ans: A

[10] Which of the following is not standard voltage for power supply in India
A. 11kV B. 33kV C. 66 kV D. 122 kV
Ans: D

MULTIPLE CHOICE QUESTIONS ANSWERS ON Electrical Safety:

Multiple Choice (circle the correct answer)

1. A person qualified to perform electrical work must possess
   A. Skills/techniques to distinguish live parts from other parts of electrical equipment.
   B. Skills and techniques to determine the nominal voltage of exposed live parts.--
   C. Knowledge on the use of PPE, insulating and shielding materials, and insulated tools.
   D. All of the above.
   Ans: D

2. Electrical injuries are commonly caused by:
A. Unsafe equipment or installations B. An unsafe environment C. Unsafe work practices.
D. All of the above
Ans:D

3. Current flow from hand to hand is called
A. Step potential B. Touch potential C. Amperage D. None of the above.
Ans: B