

**I. Entry Level Examination (Self Knowledge Based)****(M.M.=100)****(Min. pass marks=50)****Training Module for P.P. SI (R) to INSPR(R)**

| S.No | Topic                               | Topic details  |
|------|-------------------------------------|--|
| 1    | Radio Communication Theory          | <u>Brief introduction only</u><br><b>1.A.C. theory &amp; Networks analysis</b><br>1. Brief theory of Alternating Current<br>2. Concept of Power, voltage, current, impedance & power factor etc.<br>3. Basic R,L,C components , resonance, & basic circuit idea. ( filter, coils & coupling etc.)<br><b>2. Electronic devices and circuits</b><br>Semi conductors, Diode, Transistors/MOSFET, Opto-electronic devices, Amplifier , Oscillator & MODEM definitions , properties & specifications.<br><b>3. Digital electronics</b><br>Introduction to multiplexer, Flip flops, resistors and micro processor application in radio sets.<br><b>4. Power generation &amp; solutions.</b><br>Definitions and specifications of basic electronic circuitry Voltage regulator, Power supply, SMPS and different batteries(Li-ion , Li-polymer & VRLA Battery)<br><b>5. Radio communication technique</b><br>Modulation techniques (AM, FM, PM, FDMA TDMA, & PCM,) Transmitter & Receiver |
| 2    | Field Operation Theory              | <b>1. Transmission line, antenna and wave propagation</b><br>Types of transmission line, antenna and brief introduction of wave propagation SWR, impedance match, types of regular cables in use.<br><b>2. Digital HF/VHF/UHF radio</b><br>installation & networking, selection of features in radio sets, programming of repeaters & wireless sets.<br><b>3. RF planning</b><br>Identify repeater location using Radio Mobile Software and GPS instrument using GPS to find location and elevation.<br><b>4. Computer application theory - MS Word/Excel/PowerPoint</b><br>office automation and best practices.<br>Computer Hardware - trouble shooting computer hardware and printers, Polnet-points to check in case of failure. Trunking system –points to check .  |
| 3    | Radio Operating Theory & Procedure. | 1. PRC management and familiarity with different modes of transmission.<br>2. Radio Procedure<br>Complete new procedure (D.C.P.W. addition) Duties of OIC (R) watch and S.S.O., Signal security, P.W.C.C. and Procedure.<br>3. Communication security - Handling of C.S.D. / Cipher document.<br>4. Operating rules, Radio log, Recording of message, Handing and taking over charge the watch.<br>5.Out message, In message, Through message, N.R slip, delay memo.<br>6. Call and call sign, preliminary calling and answering, establishing communication, discipline to be exercised when calling and answering, offering message.<br>7. Transmitting message, Reception of message. Identification, Checks, Repetitions and correction check, Repetition and correction of group count, Control working break in working .Time signal, Emergency silence, Authentication.<br>8. Basic knowledge of communication security, PWCC.  |
| 4    | Modern Communication Techniques     | 1. IDT system- Features, Operation, & advantages of IDT system.<br>2. Radio Trunking System- Utilization and maintenance of Radio Trunking System.<br>3. Video Conferencing-<br>4. ROIP - Introduction, Concepts & deficiency  |

Administrative  
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1. Administrative function of district incharge-  
Administrative set up of MP Police, Role of workshop, Store, Office, P.R.C. in zonal and state headquarters, , functions of various branches, D.C.P.W.
2. Store & purchase rules-  
Functions of D.D.O, Sanctioning authority of officers in Police, Procedure of keeping Store ledgers, condemnation and Write off of store items, Process of budget allotment and main budget heads for Police, local purchase rules
3. Office Administration-  
Role of department in changing telecom scenario, Official correspondence and filing Proper way of documentation in PC. Leave rules, T.A. rules, Medical rules. Police organization, Police regulation, Orderly Room, maintenance of registers in Admin, Duties of O.I.C.(R) watch, record keeping.
4. Procedure of conducting D.E. and P.E.
5. Handling and supervision of different working branches-  
MTO, ADMIN, Purchase, Planning, Store, Workshop etc.



**II. Technical Knowledge (Theory)**  
**Training Module for P.P. SI( R ) to INSPR(R)**

**Duration- 04 Week**

| S.No | Topic                           | Topic details  | No. of Period<br>(52 ) |
|------|---------------------------------|--|------------------------|
| 1    | Modern Communication Techniques | (A) Digital Trunking System<br>1.1- Basic features of trunking system, Field operation, Fail soft status & precautions during system operation.<br>1.2- System advantages over conventional systems, Introduction to TETRA system, Specifications & features.<br>(B) VHF and HF networking - VHF & HF operational networking. Need of repeater and its importance, local VHF networking during important duties.   | 05                     |
| 2    | Dial-100 :- Basic Operations    | (A) Define objective role of officer incharge Dial-100.<br>1. Dial-100 system operation- SPCR/DPCR/FRV functions.<br>2. Job description- Duties & responsibilities of working staff at every level of operation.<br>3. Working knowledge of SOP 1 & 2 of Dial-100.<br>(B) Role in execution of Dial-100<br>1. Role & responsibilities of Radio District Incharge / Supervisor in Dial-100, FRV management in districts.<br>2. Control room Dial-100 management.<br>3. Staff training for Net viewer/Desk/FRV/ MDT- Use of MPS software.<br>(C) GIS Mapping , Collection of P.O.I. in field & precautions during field data collection.<br>(D) General Operations -<br>1. Complaint ticket, E-ticket generation, helpdesk operation & uses.<br>2. Data analysis & report generation.<br>(E) Operation on dash board - Introduction of AWAYA phone system , I-call center & I-Dispatcher software of Dial-100 call center.<br>(F) Feedback & public response , Cyber security precautions, C.M. helpline overview. | 05                     |
| 3    | Communication Networking        | 1. Introduction to Radio Mobile Software, Field use of RMS, alternative site selection for VHF station, topography study for repeater locations using RMS.<br>2. Evaluation of proposed antenna height and required type.<br>Suggestion of antenna type Repeaters & Patch units as per location,<br>3. VHF Networks installation process, Frequency programming in VHF sets/ repeaters.<br>4. Integration Techniques of digital trunking/tetra system with VHF Network.<br>5. Choice of transmission cable, specifications for different use. Active lightening arrester, types & specifications.  | 08                     |
|      | Field approach to Communication | 1.Frequency allotment in VHF network & frequency monitoring, interstate communication.<br>(A)Wireless frequency spectrum licensing related rules and regulations and relevant legal provisions regarding wireless act. Indian telegraphy act 1893.<br>(B) Proposal request form no. 11 send to WPC. Letter of intend, submission of license fees and royalty charge as spectrum charge, decision letter/agreement in principal SACFA-citing clearance, wireless operating license<br>2.Establishment of sub control/cluster (sector wise) stations in special duties.(election/mela/VIP duty at remote station)<br>3 Use of Geographical maps, use of GPS locator<br>4. Power Source - Battery bank & Online UPS Generator management.<br>5. HF installation process, establishing network, Types of HF sets and specifications.   |                        |
| 4    | CCTV                            | (A) City surveillance system –<br>1- <b>CCTV System</b> - introduction, network architecture, operation and uses.<br>2- CCTV System project implementation process.  | 05                     |



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|    |                                       | <p>3- <b>Types of cameras</b>- (used in cctv system) specifications field data handling (preservation of footage) and working control.</p> <p>4- <b>Familiarization</b> -of CCTV field units /outdoor equipment, indoor equipments/Control room equipment handling &amp; maintenance.</p> <p>5- Distt./City CCTV police control room working.</p> <p>6- SCMRC control room monitoring and working.</p> <p>7- <b>Use of system software's</b> -VMS, NMS, Command &amp; Control, Helpdesk working, CCTV Networking basics and SOP.</p> <p>8- <b>ANPR system</b> - Operational uses of ANPR camera &amp; its data.</p> <p>9- <b>Precautions during system installation</b>- Location, Equipment and system etc. checking before &amp; after installation of CCTV system, Fault detection.</p> <p>10- <b>RLVD system</b> - Operational command &amp; control.</p> <p>11- <b>Mobile surveillance vehicle</b> viewing and retrieving video.</p> <p><b>(B) PS CCTV System</b> – system features, network architecture, working and operation.</p> |    |
| 5  | 5.1 Video Conferencing (VC)           | 1. Introduction, Term Definitions 2. Parts (division & components), Equipments & their specifications 3. Modes of video conferencing 4. Component functions 5. Remote control button & there use 6. Installation procedure of video conferencing 7. Benefits of video conferencing.  | 02 |
|    | 5.2 Unmanned Aerial Vehicle (UAV)     | 1. General Overview & advantages of UAV 2. Main features of (DRONE) Dynamic Remotely Operated Navigation Equipment 3. Performance parameters, General Specifications & brief software introduction 4. Surveillance tools & parts of UAV 5. Application areas 6. Deployment method 7. Handling of UAV precautions before, after & during UAV flight 8. Govt. regulations/ Legal status and permission regarding UAV flight. 8. Anti Drone Technology  | 02 |
|    | 5.3 Biometric Attendance System (BAS) | 1. Overview 2. Working Procedure, Functional requirements for BAS uses. 3. Advantages of BAS in organizations 4. Registration method, change of nominated registration (on transfer and other cases) 5. Types of reports, report preparation and analysis. 6. Precautions in installation of BAS Machine   | 02 |
| 6  | Computer                              | 1. Computer hardware's- (Input/output devices) printers, scanners, portable memory devices. 2. Computer system setup & local networking 3. Description of data centre & network architecture. 4. Introduction with computer language and volatile and Non volatile memories. 5. Use of application software- Office automation & use of common application software's MS Office (Word/Excel/PowerPoint) 6. Internet & E-mail practices, Fixing of Wi-Fi MODEM, antivirus, File Transfer, downloading   | 10 |
| 7  | Solar System                          | 1. Introduction & technical characteristics of different solar panels. 2. Working principle of Solar PV cell & schematic grid of charging. 3. Solar PV panel installation, precautions regarding direction, maintenance and system safety 4. Working of intelligent BTY charger, auto switch and role of MPPT charging. 5. Designing of a solar power pack as per local requirement.   | 04 |
| 8  | Social Media                          | Operation of Social networking like Whatsapp, Twitter, Facebook, SMS & Cyber Security.<br>1. Whatsapp - Installation, Profile updating, Privacy settings<br>2. X (Twitter) - Installation, Privacy settings & twitter account handling.<br>3. SMS - Message sending procedure, brief drafting of SMS.<br>4. Facebook - ID creation, Profile settings, Privacy settings.  | 03 |
| 9  | Behavioral Science                    | 1- Basic leadership in staff management.<br>2- Communication skills for team leading, group work and small project handlings.<br>3- Staff meetings, community work & welfare initiatives.<br>4- Telephone talk, Wireless talk and their etiquettes during meeting with higher officials & social dignitaries.  | 02 |
| 10 | Digital Mobile Radio (DMR)            | Introduction, modes of DMR, Dispatcher, Microwave link, Advantages and disadvantages.<br>Introduction of LTE based radio   | 03 |
| 11 | APCO-25                               | Introduction, Operation and Advantages   | 01 |



**III. Professional/Official Approach (Administrative Role)**  
**Training Module for P.P. SI(R) to INSPR(R)**

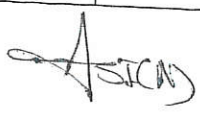
| S.No | Topic   | Topic details   | No. of Period (18) |
|------|---|---|--------------------|
| 1    | Disaster Management                                   | Definition of Natural calamities & disaster, Role of NDRF and SDRF, during disaster installation of communication system. Overview of Public protection and disaster relief.  | 02                 |
| 2    | Administrative function of district (radio) in charge | Administrative set up of MP Police, Role of workshop, Store, Office, PRC in Zonal and State Headquarters, function of various branches, DCPW, How to conduct P.E. & D.E. , Role of presenting officer in D.E.   | 02                 |
| 3    | Store & Purchase                                      | 1. Introduction to GOP 126/07, Sanctioning authority of officers in Police, budget expenditure, Knowledge of Store & Purchase Rules<br>2. Basic knowledge of office procedures- keeping store ledgers, procurement, procedure of budget allotment, main budget heads for police.<br>3. Condemnation and write off of store items.<br>4. Recovery of losses. 5. Inventory Portal   | 02                 |
| 4    | Handling of Cipher documents and communication        | Introduction & definition of security, Types of message, Security destruction maintenance of records etc. General idea of wireless operating license procedure, scrabbling techniques, communication breaches, cipher software.   | 02                 |
| 5    | Office Admin  | 1. Role & functions of DDO, Role of department in changing telecom scenario.<br>2. Official correspondence and proper filling and documentation in computers, record keeping.<br>3. General orders/rules- leave rules, TA rule, Medical rules.<br>4. Police organization personnel management of unit, Police regulation, Maintenance of registers in admin, Orderly Rooms<br>5. Maintenance of cash book, PC&R, MOW.   | 02                 |
| 6    | Role & Functions of 'MTO                              | 1. Inspection of vehicles, record handling related to fuel, vehicle duty certificate, rojnamcha & vehicle related papers (registration, PUC etc.)<br>2. Maintenance of Vehicles, repairing, stock register and vehicle condemnation record.<br>3. Fitness & medical checkup of drivers, training of staff.<br>4. Precautions for economical use of fuel.  | 02                 |
| 8    | Project handling                                      | Short term task management (POI, SPOC Data, Major Technical Installations etc.)   | 01                 |
| 9    | Communication skills                                  | Brief media reporting , Social Media - Brief messaging and event report writing.  | 01                 |
| 10   | Role of SRC   | Record maintenance of service book, OB & compilation  | 01                 |
| 11   | Duty functional skills                                | 1. Working of Control Room in charge - Co-ordination with senior officers, DCR preparation & distribution.<br>Supervision of -Dial-100 DPCR functions, Wireless Commn. control, Liaison, men power management, staff training, duty arrangement at special occasions. (Festivals/L.O./VIP/Mela/AD Ops/Disasters)<br>2. Duties of OIC(R) watch- General ability to receive, sending, cipher message code/decoding. message record keeping.<br>3. Communication skills- | 03                 |


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|  |  | <p>(a) Skills in Computer typing &amp; moderate speed.</p> <p>(b) E-mail message composition, msg downloading, save records &amp; mail forward operations.</p> <p><b>4. Operating Execution -</b></p> <p>Introduction to Radio Procedure</p> <ol style="list-style-type: none"> <li>1. Familiarize with type of messages, section component of formal message.</li> <li>2. General instructions regarding message writing. (use of priorities &amp; securities)</li> <li>3. Call signs, establishing communication, communication discipline.</li> <li>4. Operating rules, Radio log, recording of message, H/O of charge during shift change.</li> <li>5. DSR preparation &amp; distribution.</li> <li>6. Basic knowledge of communication security, handling of CSD/cipher documents.</li> </ol> |  |
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**IV. Practical approach and innovation**  
**Practical Training Module for P.P. SI(R) to INSPR(R)**


| S.No | Module Categories                  |     | Practical Topic   | No. of Period (50) |
|------|------------------------------------|-----|---|--------------------|
| 1    | Instruments                        | 1.1 | Radio test set - parameter testing & specifications.  | 05                 |
|      |                                    | 1.2 | To study Solar power system- Installation, power bank, power switching, charging procedure & maintenance.                                     |                    |
| 2    | Software uses                      | 2.1 | Frequency programming in radio sets with knowledge of frequency allotment in M.P. for VHF/HF.   | 05                 |
|      |                                    | 2.2 | To locate line of sight using radio mobile software.  |                    |
| 3    | Fault finding                      | 3.1 | Gen. procedure of tracing & fault finding in radio sets.  | 05                 |
| 4    | Demonstration/Visits               | 4.1 | Demonstration of CCTV, P.S. CCTV system, ANPR camera operation.   | 06                 |
|      |                                    | 4.2 | Demonstration of Dial- 100, operation of MDT, net viewer, Technical visit of Dial-100 control room/ CCTV control room.                        | 03                 |
| 5    | Fabrication                        | 5.1 | Fabrication & maintenance of different repeaters.   | 05                 |
|      |                                    | 5.2 | Operation & general maintenance of VC system.   |                    |
| 6    | Communication Network Installation | 6.1 | Installation of temporary/new DMR/VHF/ HF radio station.  | 01                 |
|      |                                    | 6.2 | Installation, operation & configuration of IDT system.  | 01                 |
|      |                                    | 6.3 | Computer application software installation.   | 01                 |
|      |                                    | 6.4 | Study the working operation of GPS & GIS Mapping  | 01                 |
| 7    | Practical Demonstration            | 7.1 | Internet & E-mail operations, Do's & Don'ts for E-mail, Precautions during handling of temp. Memories (pen drive, CD, DVD, Memory Card, etc.) | 01                 |
|      |                                    | 7.2 | Practical's using MS Office (Editing, File formatting Printing, Scanning, downloading, Hyper linking)   |                    |


  
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