NOTIFICATION

TELANGANA STATE LEVEL POLICE RECRUITMENT BOARD
DGP OFFICE COMPLEX, LAKIDI-KA-PUL, HYDERABAD

Rc No. 288 / Rect. / Genl.2 / 2025 Date: 14th November 2025

1. VACANCIES

The Telangana State Level Police Recruitment Board (TSLPRB) invites Applications from eligible Candidates through **ONLINE** mode only in the prescribed proforma which will be made available on TSLPRB Website (www.tgprb.in) **from 8 a m on 27th November 2025 onwards till 5 p m on 15th December 2025** for direct recruitment to the following Posts in Telangana State Forensic Science Laboratory. The details of vacancies as furnished by Director, TG FSL, are as follows –

Sl. No.	Post Code	Name of the Post	Vacancies	Scale of Pay
1	51	Scientific Officer (Physical / General)	2	Rs.45,960 – 1,24,150
2	52	Scientific Officer (Chemical)	3	
3	53	Scientific Officer (Biology / Serology)	3	
4	54	Scientific Officer (Computers)	2	
5	55	Scientific Assistant (Physical / General)	5	Rs.42,300 – 1,15,270
6	56	Scientific Assistant (Chemical)	10	
7	57	Scientific Assistant (Biology / Serology)	10	
8	58	Scientific Assistant (Computers)	7	
9	59	Laboratory Technician (Physical / General)	2	Rs.24,280 – 72,850
10	60	Laboratory Technician (Chemical)	6	
11	61	Laboratory Technician (Biology / Serology)	4	
12	62	Laboratory Technician (Computers)	5	
13	63	Laboratory Attendant	1	Rs.20,280 – 62,110
Total			**60**	

The number of vacancies indicated above is only tentative and is liable to change without any notice. TSLPRB reserves the right to notify the required modifications with regard to any aspect of recruitment during the process of recruitment.

2. CANDIDATAES TO CHECK ELIGIBILITY BEFORE APPLYING

Candidates who are desirous and eligible *REPEAT eligible only* may apply through ONLINE mode only after having satisfied themselves of their eligibility for this recruitment (Please see *Para 11*: *Eligibility Conditions of Candidates to ensure their eligibility for the Posts and Para 4: General Instructions).*

3. DISTRIBUTION OF VACANCIES COMMUNITY-WISE

The distribution of vacancies for Direct Recruitment to the Posts, category-wise as furnished by the Director, TG FSL, is furnished hereunder –

Name of the Post	OC	BC					SC Group			ST	EWS	OH	Total
		A	B	C	D	E	I	II	III				
Scientific Officer (Phys / Gen)	1	0	0	0	0	0	0	1	0	0	0	0	**2**
Scientific Officer (Chem)	2	0	0	0	0	0	0	1	0	0	0	0	**3**
Scientific Officer (Bio/Sero)	2	0	0	0	0	0	0	1	0	0	0	0	**3**
Scientific Officer (Compu)	1	0	0	0	0	0	0	1	0	0	0	0	**2**
Scientific Assistant (Phy / Gen)	3	1	0	0	0	0	0	1	0	0	0	0	**5**
Scientific Assistant (Chem)	3	1	1	0	0	0	1	1	0	1	1	1	**10**
Scientific Assistant (Bio / Sero)	3	1	1	0	0	0	1	1	0	1	1	1	**10**
Scientific Assistant (Compu)	3	1	0	0	0	0	1	1	0	0	0	1	**7**
Lab Technician (Phys / Gen)	1	0	0	0	0	0	0	1	0	0	0	0	**2**
Lab Technician (Chem)	3	1	0	0	0	0	0	1	0	0	0	1	**6**
Lab Technician (Bio / Sero)	2	1	0	0	0	0	0	1	0	0	0	0	**4**
Lab Technician (Compu)	3	1	0	0	0	0	0	1	0	0	0	0	**5**
Lab Attendant	1	0	0	0	0	0	0	0	0	0	0	0	**1**
Total	**28**	**7**	**2**	**0**	**0**	**0**	**3**	**12**	**0**	**2**	**2**	**4**	**60**

4. GENERALINSTRUCTIONS

a) Candidates are required to go through the Notification meticulously and decide themselves as to their eligibility with reference to the laid down criteria for this recruitment carefully, before applying and filling in all the relevant columns in Online Application Form.

b) Applications received online shall only be considered and the Telangana State Level Police Recruitment Board (TSLPRB) will not be held responsible for any kind of discrepancy.

c) TSLPRB will not be responsible for any inconsistencies or errors in the Application submitted online. Candidates are advised to strictly follow the instructions in their own interest and to verify the contents before submitting the Online Application.

d) Particulars furnished by the Candidates in the Online Application Form will be taken as final. Candidates should therefore, be very careful in uploading / submitting the Online Application Form.

e) No relevant column of the Online Application Form should be left blank. Incomplete / Incorrect Online Application Form will be summarily rejected. Information, if any, furnished by the Candidate subsequently in any form will not be entertained by the TSLPRB under any circumstances. Candidates should be careful in filling-up the Online Application Form before submission. If any lapse is detected at any stage of the recruitment process, the candidature will be rejected.

f) Candidates should not furnish any particulars that are false, tampered or fabricated. They shall not suppress or conceal any material information while filling the Application Form online. In case, if it is found at a later date that any false information has been provided, punitive action will be taken as per law.

g) Candidates are expected to behave in an orderly and disciplined manner while appearing for the Examinations. Any impersonation will be viewed adversely and such Candidates shall be criminally prosecuted besides being disqualified.

h) All the testimonials issued by the competent authorities shall compulsorily be produced as and when required. If the Candidate fails to produce the same, his / her candidature will be rejected / disqualified without any further correspondence.

i) The claim of the Candidates with regard to the Age, Date of Birth, Educational Qualifications, Community etc., are accepted only provisionally on the information furnished by them in their Online Application Form and Certificates produced, subject to verification and satisfaction of the TSLPRB, at an appropriate time. Mere acceptance of Application, admission to any Exam or inclusion of a Candidate in Qualified Candidates List does not confer any right for selection. The candidature is therefore, provisional at all stages and the TSLPRB reserve the right to reject his / her candidature at any stage of the selection without any notice.

j) If Candidates who are Under-Aged or Over-Aged apply for this Recruitment Notification, their candidature will be rejected at any time and TSLPRB is not responsible for the same. Fee once paid will not be refunded.

k) As Candidature for the recruitment is processed through Computer / Electronic devices, based on the particulars furnished in the Online Application Form, the Candidates are advised to fill in all the relevant particulars carefully.

5. FEE STRUCTURE

Candidates have to pay the following fees for the respective Post/s towards Registration of the Application, Processing of Application, Conduct of Examinations, Maintenance of Portal etc. Candidates applying for the Posts in different subjects shall have to pay fee separately for each such subject as they will be administered different Written Tests (Subject-wise)

Sl No	Post	Fees Particulars	
		SC and ST Local Candidates to Telangana	All Others
1	Scientific Officers	Rs.1000/-	Rs.2000/-
2	Scientific Assistants	Rs.1000/-	Rs.2000/-
3	Laboratory Technicians	Rs.600/-	Rs.1200/-
4	Laboratory Attendant	Rs.500/-	Rs.1000/-

6. PAYMENT OF FEE

I Step: Candidate has to register on the TSLPRB Website – **www.tgprb.in** by making his / her Mobile Number as his / her User ID. Candidates are advised to provide only such Mobile Number as their Login ID which will be in currency throughout the process of recruitment and will be in their personal custody. It shall be their responsibility to ensure that this Number is maintained continuously without any interruption throughout the process of the recruitment, so that there will not be any loss or communication between the Board and the Candidates.

II Step: The fee can be paid by using Credit Card, Debit Card, Net Banking or any other mode to be made available on the TSLPRB Website.

III Step: After making the Payment, it shall be the responsibility of the Candidate to visit the website www.tgprb.in to submit the Online Application Form. Even after making payment of Fee, if the Candidates fail to press submit button and the Application is not uploaded, such Applications shall be rejected without giving any notice and fee once paid will not be refunded in any case.

7. INSTRUCTIONS FOR FILLING THE ONLINE APPLICATION

a) The following steps are to be followed by the Candidates who intend to submit the online Application Form through Payment Gateway -

i. Registration using Mobile Phone as User ID
ii. Select the Post(s) for which he / she wants to apply as per the eligibility
iii. Note the Fee that has to be paid depending on the Post/s chosen
iv. Payment of Fee using any mode made available
v. Continue on TSLPRB Website with the User ID and fill the Application Form
vi. Scan and Upload copy of Passport Photograph and Specimen Signature as one file
vii. Submit the Application Form along with Uploaded documents

b) Candidates are requested to check their eligibility carefully and fill-in all the relevant columns in the Online Application Form. Candidates should not register more than one Application Form for the present Recruitment Process. Submission of more than one Application for this recruitment will lead to cancellation of all such Applications.

c) Candidates should keep ready a soft copy of his / her passport size photo + specimen signature combined as one file image in jpg format as shown below to be scanned and upload with the Online Application Form.

Recent Passport Photograph of the Candidate
Signature

d) Application will be rejected, if the Candidate uploads only Photo without Signature. Size of the above image / file should not exceed 100kb (Minimum size is 30kb). Please note that if the file is not in jpg format, system will reject the same and Candidate may not be able to complete the process of filling up the remaining details of the Online Application Form.

e) Candidates can use the "Apply Online" in the website (www.tgprb.in) to fill his / her Online Application Form by making payment of Fee.

f) Candidates are advised to fill their Online Application Form themselves instead of handing it over to others to avoid any wrong entries.

g) Candidates are advised to carefully read all the instructions and understand before clicking on "I AGREE".

h) **Candidates should endorse the declaration at the end of the Online Application signifying the fact that they have read and understood all the Rules and Regulations and that they agree to scrupulously abide by them and confirm with an OTP (One Time Password) sent to the candidate's Registered Mobile**.

i) Once the Candidate submits the Application Form, no corrections can be made. Hence Candidates are requested to carefully verify the details before submission.

j) After submission of Online Application Form, the Candidate must download a copy of his / her submitted form in Pdf for future use.

8. UPLOADING OF DOCUMENTS

Copies of the following documents must be uploaded in support of the information given in the Application Form where necessary as well as the documents in original should be produced at the time of Certificates verification. Failure to upload the same will lead to rejection of the Online Application Form.

i. Secondary School / Matriculation Certificate or its equivalent Certificate in support of Date of Birth

ii. Educational Qualification Certificates pertaining to the relevant Post/s as per his / her eligibility (See Para No. 11 B of this Notification)

iii. Study Certificate (s) issued by the Government School Authorities / Government recognized School Authority (from 1st to 7th classes) or Residence Certificate issued by M R O (in case where the Candidate has not studied in any educational institution) for last 4 / 7 years stay prior to and inclusive of 7th Class (Annexure-IV(A) or Annexure-IV(B)

iv. Latest Community Certificate issued by the Competent Authority of Government of Telangana. Candidates who belong to SC Category should submit Community Certificate as per Act No.15 of 2025, dated 14-04-2025 issued by the Government of Telangana with regard to reservations to SCs by way of sub-classification.

v. Non-Creamy Layer Certificate issued by the Competent Authority issued on or after 1st April 2025 (in case of BC Candidates)

vi. Certificate of Economically Weaker Section (EWS) category issued by the competent authorities issued on or after 1st April 2025 wherever applicable

vii. Certificate from the Superintendent Government General Hospital / Superintendent of District Headquarters Hospital in respect of Orthopedically handicapped persons (Annexure - V)

viii. Work experience Certificate in any Central or State Forensic Science Laboratory in the similar Post as Contract / Outsourcing / regular, to be certified by the Director of FSL / CFSL

ix. NCC Instructor Certificate / Service Certificate in case of Telangana State Government Employee / PPO (Pension Payment Order) / Discharge Book / NOC in case of Indian Army / Indian Navy / Indian Air Force / Indian Territorial Army under Ex-Servicemen category wherever applicable for claiming Age relaxation

9. RULES GOVERNING THE POSTS

The recruitment to the Posts of Scientific Officers, Scientific Assistants, Laboratory Technicians and Laboratory Attendant are being made as per the provisions of the Telangana Forensic Science Laboratory Direct Recruitment Rules issued by the Government of Telangana in GO Ms No. 39 & 40 of Home (Legal) Department, dated 28-03-2025.

10. SPECIAL REPRESENTATION (RESERVATION)

A) Reservation:

i) The rule of Special Representation (Reservation) in terms of Rule 22 and 22 (A) of Telangana State & Subordinate Service Rules, 1996, shall be applicable.

ii) The quota earmarked for Orthopedically Handicapped persons in the said rules, shall, however, be filled in only by Orthopedically Handicapped persons whose speech, hearing and sight are not impaired.

iii) Reservation to Orthopedically Handicapped persons is subject to their eligibility to the above category of Post and shall be subject to Special Rules / Adhoc Rules governing the Posts. The required extent of deformity and the genuineness of the

Medical Certificate and any ambiguity or doubt, shall be referred to the Appellate Medical Boards as per the instructions of the Government.

B) Community:

i) SC and ST Candidates who are local Candidates to Telangana State as per the definition given in the Presidential Order, 2018, are required to produce latest Community Certificate issued by the Competent Authority of Government of Telangana State for claiming Age relaxation / reservation. Candidates who belongs to SC Category should submit Community Certificate as per Act No. 15 of 2025, dated 14-04-2025 issued by the Government of Telangana with regard to reservations to SCs by way of sub-classification in the State. **The SC Community Certificates issued before 14th April 2025 without SC Sub-Classification as per above Act shall not be considered for reservation under SC Category.**

ii) BC Candidates who are local Candidates to Telangana State as per the definition given in the Presidential Order 2018, are required to produce Community Certificate (BC-A, BC-B, BC-C, BC-D & BC-E) from Competent Authority of the Telangana State Government.

iii) Candidates belong to Backward Classes shall submit the Community Certificate to claim Age relaxation and the latest Certificate of Non Creamy Layer issued by the Competent Authorities of Telangana State on or after 01-04-2025 to claim Reservation. **In case of failure to produce the Non Creamy Layer Certificate on the day of Certificates Verification, such Candidates will be considered under "Open Competition", if otherwise eligible, and the status cannot be changed later.**

iv) Relaxation in upper age limit and / or reservation to BC-E Group will be subject to the adjudication of the litigation pending before the Honourable Courts including final orders in Civil Appeal No(s). 2628-2637 of 2010 in SLP No. 7388-97 of 2010 dated 25-03-2010 and orders of the Government.

v) BC, SC and ST Candidates who are not local to Telangana State as per Presidential order 2018 are not entitled for any kind of reservation.

C) Economically Weaker Section (EWS):

Candidates who are local Candidates to Telangana State as per the definition given in the Presidential Order 2018 and belonging to Economically Weaker Section category (as per GO Ms No. 65, GA (Ser. D) Department, dated 19.03.2021 r/w GO Ms No. 244, GA (Ser. D) Department, dated 24-08-2021) shall submit the Income and Asset Certificate issued by any of the following Authorities of Government of Telangana State to claim Age relaxation and Reservation under this Category.

i) District Magistrate / Additional District Magistrate / Collector / Sub-divisional Magistrate / Mandal Revenue Officer

ii) Revenue Officer not below the rank of Tahsildar and

iii) Sub-Divisional Officer of the area where the Candidate and / or his family normally resides

D) Women Reservation:

33⅓% of the vacancies in each category are reserved for Women under Direct Recruitment on horizontal basis as per amendment to Rule 22 (A) of Telangana State and Sub-ordinate Service Rules, 1996 vide GO Ms No. 35, GA (Ser.D) Department, dated 13-02-2024. Reservation for Women will be a horizontal reservation following the principle of sufficiency i.e., reservation of Women Candidates shall be adjusted proportionately in the respective category to which the Woman Candidate belongs. In the event of non-availability of eligible and suitable Women Candidates, the vacancies reserved for them shall not be carried forward for the succeeding recruitment and shall be filled up by Men Candidates of respective Community Category in the same recruitment.

11. ELIGIBILITY CONDITIONS (CANDIDATES TO ENSURE THEIR ELIGIBILITY FOR THE POSTS)

The Candidates applying for the Post/s should ensure that they fulfill all eligibility conditions for admission to examination. Their admission at all the stages of the examination will be purely provisional and subject to satisfying the prescribed eligibility conditions.

Mere issue of Hall Ticket to the Candidate will not imply that his / her candidature has been finally cleared by the Board

The TSLPRB will take up verification of eligibility conditions with reference to original documents only after the Candidate is finally qualified.

A. Age Limit:

i) A Candidate must have attained the age of 18 years and must not have attained the age of 34 years as on 1st July 2025. However, the Government of Telangana vide GO Ms No. 30, General Administration (Services-A) Department dated 08-02-2024 have raised the upper age limit prescribed for direct recruitment by 12 (twelve years) to the various categories of the Posts to be notified for the purpose of direct recruitment. This relaxation is in addition to the upper age limit as mentioned above.

ii) **Age Relaxations**: The upper age limit prescribed above is however relaxable in certain cases as shown in the Table below. It may please be noted that the date of birth accepted by the TSLPRB is that entered in the Secondary School Certificate or Matriculation or an equivalent examination certificate. No other document relating to age including horoscopes, affidavits, birth-extracts from local bodies, service records including Aadhar and the like will be accepted.

Sl. No.	Category of Candidates	Relaxation of Age
1	Telangana State Government Employees (Employees of TSTRANSCO, DISCOMs, TSGENCO, State Road Transport Corporation and other Telangana State Corporations, Municipalities, Local Bodies, Public Sector Undertakings etc., are not entitled for age relaxation)	Length of regular service subject to a maximum period of 5 (five)Years
2	Ex-Servicemen (who Served in Indian Army / Indian Air Force /Indian Navy)	3(three) Years in addition to the length of Service rendered in the armed forces.
3	NCC Instructor (who rendered a minimum service of 6 months as a whole time NCC Instructor.)	3 (three)Years in addition to the length of Service rendered by him as instructor in the NCC
4	SCs, STs, BCs and EWS	5 (five)Years
5	Orthopedically Handicapped	10 (ten)Years

iii) **Age relaxation for Women Candidates for the Post Code Nos. 59, 60, 61, 62 and 63**: In the case of a Widow, a Divorced Woman or a Woman judicially separated from her husband and who is not remarried,

a) SC & ST Candidates must have attained the age of 18 years and must not have attained the age of 40 years as on 1st July, 2025. However, the Government of Telangana vide GO Ms No. 30, General Administration (Services-A) Department dated 08-02-2024 have raised the upper age limit prescribed for direct recruitment by 12 (twelve years) to the various categories of the Posts to be notified for the purpose of direct recruitment. This relaxation is in addition to the upper age limit as mentioned above.

b) In all other cases (other than SC & ST), the Candidate must have attained the age of 18 years and must not have attained the age of 35 years as on 1st July, 2025. However, the Government of Telangana vide GO Ms No. 30, General Administration (Services-A) Department dated 08-02-2024 have raised the upper age limit prescribed for direct recruitment by 12 (twelve years) to the various categories of the Posts to be notified for the purpose of direct recruitment. This relaxation is in addition to the upper age limit as mentioned above.

Note: A women Candidate claiming Age relaxation by virtue of being either a Widow or a Divorcee or a Woman judicially separated should produce the following documentary evidence.

i) In case of Widow, Death Certificate of her husband together with the Affidavit duly notarized that she has not re-married since.

ii) In case of Divorced Women and Women judicially separated from their husband, a certified copy of the Judgment / Decree of the appropriate court to prove the fact of divorce or the judicial separation, as the case may be, along with an Affidavit duly notarised that she has not re-married since.

B. Educational Qualification:

The Post-wise educational qualifications as on the **date of this Notification** are as follows -

Post Code	Post	Educational Qualifications
51	Scientific Officer (Physical / General)	Must have passed M.Sc. with Physics or Forensic Science with Physics as special subject with minimum 65% aggregate marks of a University of India established or incorporated by or under a Central Act, State Act or a Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The candidates with Post Graduation in Forensic Science should have studied Physics as one of the subjects at Graduation level.

Post Code	Post	Educational Qualifications
52	Scientific Officer (Chemical)	Must have passed M.Sc. with Chemistry or Forensic Science with Chemistry as special subject with minimum 65% aggregate marks of a University of India established or incorporated by or under a Central Act, State Act or a Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The candidates with Post Graduation in Forensic Science should have studied Chemistry / Toxicology as one of the subjects at Graduation level.
53	Scientific Officer (Biology / Serology)	Must have passed M.Sc. with Biology or Genetics or Zoology or Botany or Micro-Biology or Bio-Technology or Bio-Chemistry or Psychology (M.A / M.Sc.) or Forensic Science with specialization in Biology / Serology / DNA with minimum 65% aggregate marks of a University of India established or incorporated by or under a Central Act, State Act or a Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The Candidates with Post Graduation in Forensic Science / Bio-Chemistry should have studied Biology / Genetics / Micro Biology / Serology / DNA / Zoology / Bio-Chemistry / Bio-Technology / Psychology at Graduation level.
54	Scientific Officer (Computers)	Must have passed M.Sc. with Computer Science or M.Tech (EEE / ECE / Cyber Security / Cyber Forensics / CSC / IT) or MCA or Forensic Science (Computers) with minimum 65% aggregate marks from any University in India established or incorporated by or under a Central or a State Act or a Provincial Act or an Institution recognized by the UGC or an equivalent qualification. MCA / Forensic Science Candidates should have studied Physical Sciences / Computers as a specialization at Graduation level.

Post Code	Post	Educational Qualifications
55	Scientific Assistant (Physical/General)	Must have passed M.Sc. with Physics or Forensic Science with Physics as specialized subject with minimum 60% aggregate marks from any University in India established or incorporated by Central Act, State Act or Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The Candidates with Post Graduation in Forensic Science should have studied Physics as one of the subjects at Graduation level.
56	Scientific Assistant (Chemical)	Must have passed M.Sc. with Chemistry or Forensic Science with Chemistry as specialized subject with minimum 60% aggregate marks from any University in India established or incorporated by Central Act, State Act or Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The Candidates with Post Graduation in Forensic Science should have studied Chemistry / Toxicology as one of the subjects at Graduation level.
57	Scientific Assistant (Biology / Serology)	Must have passed M.Sc. with Biology / Zoology / Botany / Micro-Biology / Bio-Chemistry / Bio-Technology / Genetics / Psychology (M.A) or Forensic Science with Biology / Zoology / Serology / DNA / Botany / Micro-Biology / Bio-Chemistry / Bio-Technology / Psychology as a specialized subject with minimum 60% aggregate marks from any University in India established or incorporated by Central Act, State Act or Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The Candidates with Post Graduation in Forensic Science / Bio-Chemistry should have studied Biology/Genetics/Micro Biology/Serology/DNA/Botany/Zoology/Bio-Chemistry / Bio-Technology / Psychology at Graduation level.

Post Code	Post	Educational Qualifications
58	Scientific Assistant (Computers)	Must have passed M Sc with Computer Science or M Tech (EEE / ECE / Cyber Security / Cyber Forensics / CSC / IT) or MCA or Forensic Science with Computers as a special subject with minimum 60% aggregate marks from any University in India established or incorporated by Central Act, State Act or Provincial Act or an Institution recognized by the UGC or an equivalent qualification. The Candidates with Post Graduation in MCA / Forensic Science should have studied Physical Sciences / Computers as a specialization at Graduation level.
59	Laboratory Technician (Physical / General)	Must have passed B.Sc. with Physics / B.Sc. Forensic Science from any University in India established or incorporated by or under Central Act or Provincial Act or a State Act or an Institution recognized by the University Grants Commission. Candidates who studied B.Sc. Forensic Science should have passed Intermediate with Physics as one of the subject.
60	Laboratory Technician (Chemical)	Must have passed B.Sc. with Chemistry or B.Sc. Forensic Science from any University in India established or incorporated by or under Central Act or Provincial Act or a State Act or an Institution recognized by the University Grants Commission. Candidates who studied B.Sc. Forensic Science should have passed intermediate with Chemistry as one of the subject.
61	Laboratory Technician (Biology / Serology)	Must have passed B.Sc. with Biology or Zoology or Bio-Chemistry or Bio-Technology or Microbiology or Botany or Genetics or B.Sc. (Medical Lab Technician with Intermediate Bi PC group) / B.Sc. Forensic Science from any University in India established or incorporated by or under Central Act or Provincial Act or a State Act or an institution recognized by the University Grants Commission. Candidates who studied B.Sc. Forensic Science should have passed Intermediate with Biology / Zoology / Botany as one of the subjects.

Post Code	Post	Educational Qualifications
62	Laboratory Technician (Computers)	Must have passed Bachelors Degree with Computers as Specialized subject or BCA from any University in India established or incorporated by or under Central Act or Provincial Act or a State Act or an Institution recognized by the University Grants Commission.
63	Laboratory Attendant	Must have passed Intermediate with MPC or Bi.PC recognized by the State Government.

Note:

The Candidates who possess higher qualification in the relevant subject than the prescribed one will also be considered for selection on par with the Candidates who possess the prescribed qualification.

C. Medical Standards:

i) Visual Standard: Visual Standards for the above selection shall be as follows:

Vision	Right Eye	Left Eye
Distant Vision	6 / 6	6 / 6
Near Vision	0 / 5 (Snellen)	0 / 5 (Snellen)

ii) Each eye must have a full field of vision.

iii) Colour blindness, squint or any morbid condition of the eye or lids of either eye shall be deemed to be a disqualification.

Note:

In order to prevent disappointment, candidates are advised to have themselves examined by a **Civil Surgeon** before applying for the examination to ensure that they meet the prescribed Physical and Medical Standards.

12. SELECTION PROCEDURE / SCHEME

The Selection Procedure / Scheme of the Exam will be as follows –

a) Selection Procedure for the Posts of Scientific Officers (Post Code Nos. 51 to 54)

(i) Weightage Marks: Candidates who possesses the required Qualifications, shall be awarded 70 marks as Weightage on the basis of the Academic Qualifications and work experience for the Post Codes from 51 to 54, as specified below –

S No	Academic Qualification		Maximum Weightage Marks
1	Percentage of Aggregate score of SSC or equivalent qualification		5 Marks (% of Score X 0.05)
2	Percentage of Aggregate score of Intermediate of relevant qualification		10 Marks (% of Score X 0.10)
3	Percentage of Non-languages score of Graduation (3 years Degree) of relevant qualification		15 Marks (% of Score X 0.15)
4	Percentage of Aggregate Score of Post-Graduation (MSc) with the relevant Subject		25 Marks (% of Score X 0.25)
5	Possessing the higher Certificate of Master of philosophy (M Phil) / Doctor of Philosophy (PhD) with the relevant Subject/s		Maximum of 10 Marks
	a)	If Possessing the Certificate of Master of philosophy (M Phil) with the relevant Subject/s	5 Marks
	b)	If Possessing the Certificate of Doctor of Philosophy (PhD) with the relevant Subject/s	10 Marks
6	Work experience in any Central or State Forensic Science Laboratory in the similar Post as Contract / Outsourcing / regular employee, to be certified by the Director of FSL / CFSL		Maximum of 5 Marks
	a)	Candidates who have work experience continuously for a period of full two years and below 3 years as on the date of Notification	2 Marks
	b)	Candidates who have work experience continuously for a period of full three years and below 5 years as on the date of Notification	3 Marks
	c)	Candidates who have work experience continuously for a period of full five years and below 8 years as on the date of Notification	4 Marks
	d)	Candidates who have work experience continuously for a period of full 8 years and above as on the date of Notification	5 Marks
Total			**70 Marks**

Weightage marks for each Academic Qualification shall be rounded mathematically to 2 decimal places.

(ii) Written Examination: The number of Candidates to be admitted to attend the Written Examination (for 30 marks) would be in the ratio of 1:5 of the total number of vacancies covering all horizontal and vertical category reservations from among the Candidates as per merit of the Academic Weightage marks as above or lesser – subject to availability of Candidates. The short-listed Candidates as per the Weightage Marks and as per the ratio shall be required to appear for the Written Examination in one paper (one hour duration) for each of the relevant Post with the maximum of 30 Marks. The syllabus for the relevant paper is given in **Annexure – I**.

Note:

a) The minimum marks to be secured by the Candidates in order to qualify in the Written Examination is 40% for OC Posts including EWS, 35% for BC Posts and 30% for SC Posts / ST Posts / Orthopedically disabled Posts, out of 30 marks. Candidates who secure less than 40% marks in the Written Examination shall not be considered for the Posts notified under OC / EWS Category.

b) Paper will be descriptive in nature. The Candidates have to answer the questions using blue / black Ball point pen in the question-cum-answer booklet which will be supplied by TSLPRB.

(iii) Selection: The selection of the Candidates shall be made strictly on their relative merit, as obtained by them based on their aggregate score of the Written Examination (30 Marks) and Weightage Marks (70 Marks) aggregating to a total of 100 Marks. The local candidate reservations as provided in "The Telangana Public Employment (Organization of Local Cadres and Regulation of Direct Recruitment) Order, 2018" are not applicable to this selection. However, to avail of any vertical or horizontal reservation, the Candidate must be a local of Telangana State as defined in the Presidential Order, 2018 and having Community Certificate other relevant certificate issued by the competent authority of Telangana State.

b) Selection Procedure for Scientific Assistants (Post Code Nos. 55 to 58)

(i) Weightage Marks: Candidates who possesses the required Qualifications, shall be awarded 70 marks as Weightage on the basis of the Academic Qualifications and work experience for the Post Codes from 55 to 58, as specified below –

S No	Academic Qualification		Maximum Weightage Marks
1	Percentage of Aggregate score of SSC or equivalent qualification		5 Marks (% of Score X 0.05)
2	Percentage of Aggregate score of Intermediate of relevant qualification		10 Marks (% of Score X 0.10)
3	Percentage of Non-languages score of Graduation (3 years Degree) of relevant qualification		15 Marks (% of Score X 0.15)
4	Percentage of Aggregate Score of Post Graduation with the relevant Subject		25 Marks (% of Score X 0.25)
5	Possessing the higher Certificate of Master of philosophy (M Phil) / Doctor of Philosophy (PhD) with the relevant Subject/s		Maximum of 10 Marks
	a)	Possessing the Certificate of Master of philosophy (M Phil) with the relevant Subject/s	5 Marks
	b)	Possessing the Certificate of Doctor of Philosophy (PhD) with the relevant Subject/s	10 Marks
6	Work experience in any Central or State Forensic Science Laboratory in a similar Post as Contract / Outsourcing / regular employee, to be certified by the Director of FSL / CFSL		Maximum of 5 Marks
	a)	Candidates who have work experience continuously for a period of full two (2) years and below three (3) years as on the date of Notification	2 Marks
	b)	Candidates who have work experience continuously for a period of full three (3) years and below five (5) years as on the date of Notification	3 Marks
	c)	Candidates who have work experience continuously for a period of full five (5) years and below eight (8) years as on the date of Notification	4 Marks
	d)	Candidates who have work experience continuously for a period of full eight (8) years and above as on the date of Notification	5 Marks
Total			**70 Marks**

Weightage marks for each Academic Qualification shall be rounded mathematically to 2 decimal places

(ii) Written Examination: The number of Candidates to be admitted to attend the Written Examination **(for 30 Marks)** would be in the ratio of 1:5 of the total number of vacancies covering all horizontal and vertical category reservations from among the Candidates as per merit of the weightage marks as above or lesser – subject to availability of Candidates. The short-listed Candidates as per the Weightage Marks and as per the ratio shall be required to appear for the Written Examination in one paper (one hour duration) for each of the relevant Post with the maximum of 30 Marks. The syllabus for the relevant paper is given in **Annexure – I**.

Note:

a) The minimum marks to be secured by the Candidates in order to qualify in the Written Examination is 40% for OC Posts including EWS, 35% for BC Posts and 30% for SC Posts / ST Posts / Orthopedically disabled Posts, out of 30 marks. Candidates who secure less than 40% marks in the Written Examination shall not be considered for the posts notified under OC / EWS Category.

b) Paper will be descriptive in nature. The Candidates have to answer the questions using blue / black Ball point pen in the question-cum-answer booklet which will be supplied by TSLPRB.

(iii) Selection: The selection of the Candidates shall be made strictly on their relative merit, as obtained by them based on their aggregate score of the Written Examination (30 Marks) and Weightage Marks (70 Marks) aggregating to a total of 100 Marks. The local candidate reservations as provided in "The Telangana Public Employment (Organization of Local Cadres and Regulation of Direct Recruitment) Order, 2018" are not applicable to this selection. However, to avail of any vertical or horizontal reservation, the Candidate must be a local of Telangana State as defined in the Presidential Order, 2018 and having Community Certificate other relevant certificate issued by the competent authority of Telangana State.

c) Selection procedure for Laboratory Technicians (Post Code Nos. 59 to 62)

(i) Weightage Marks: Candidates who possesses the required Qualifications, shall be awarded 70 marks as Weightage on basis of the Academic Qualifications and work experience for the Post Codes from 59 to 62, as specified below –

S No	Academic Qualification		Maximum Weightage Marks
1	Percentage of Aggregate score of SSC or equivalent qualification		5 Marks (% of Score X 0.05)
2	Percentage of Aggregate score of Intermediate of relevant qualification		10 Marks (% of Score X 0.10)
3	Percentage of Non-languages score of Graduation (3 years Degree) of relevant qualification		25 Marks (% of Score X 0.25)
4	Percentage of Aggregate Score of Post-Graduation (MSc) with the relevant Subject		15 Marks (% of Score X 0.15)
5	Possessing the higher Certificate of Master of philosophy (M Phil) / Doctor of Philosophy (PhD) with the relevant Subject/s		Maximum of 10 Marks
	a)	Possessing the Certificate of Master of philosophy (M Phil) with the relevant Subject/s	5 Marks
	b)	Possessing the Certificate of Doctor of Philosophy (PhD) with the relevant Subject/s	10 Marks
6	Work experience in any Central or State Forensic Science Laboratory in the similar Post as Contract / Outsourcing / regular employee to be certified by Director of FSL / CFSL		Maximum of 5 Marks
	a)	Candidates who have work experience continuously for a period of full two (2) years and below three (3) years as on the date of Notification	2 Marks
	b)	Candidates who have work experience continuously for a period of full three years and below 5 years as on the date of Notification	3 Marks
	c)	Candidates who have work experience continuously for a period of full five (5) years and below eight (8) years as on the date of Notification	4 Marks
	d)	Candidates who have work experience continuously for a period of full eight (8) years and above as on the date of Notification	5 Marks
Total			**70 Marks**

Weightage marks for each Academic Qualification shall be rounded mathematically to 2 decimal places

(ii) Written Examination: The number of Candidates to be admitted to attend the Written Examination (**for 30 marks**) would be in the ratio of 1:5 of the total number of vacancies covering all horizontal and vertical category reservations from among the Candidates as per merit of the weightage marks as above or lesser – subject to availability of Candidates. The short-listed Candidates as per the Weightage Marks and as per the ratio shall be required to appear for the Written Examination in one paper (one hour duration) for each of the relevant Post with the maximum of 30 Marks. The syllabus for the relevant paper is given in **Annexure – II**.

Note:

a) The minimum marks to be secured by the Candidates in order to qualify in the Written Examination is 40% for OC Posts including EWS, 35% for BC Posts and 30% for SC Posts / ST Posts / Orthopedically disabled Posts, out of 30 marks. Candidates who secure less than 40% marks in the Written Examination shall not be considered for the Posts notified under OC / EWS Category.

b) Paper will be descriptive in nature. The Candidates have to answer the questions using blue / black ball point pen in the question-cum-answer booklet which will be provided by TSLPRB.

(iii) Selection: The selection of the Candidates shall be made strictly on their relative merit, as obtained by them based on their aggregate score of the Written Examination (30 Marks) and Weightage Marks (70 Marks) aggregating to a total of 100 Marks. The local candidate reservations as provided in "The Telangana Public Employment (Organization of Local Cadres and Regulation of Direct Recruitment) Order, 2018" are not applicable to this selection. However, to avail of any vertical or horizontal reservation, the Candidate must be a local of Telangana State as defined in the Presidential Order, 2018 and having Community Certificate other relevant certificate issued by the competent authority of Telangana State.

d) Selection procedure for Laboratory Attendant (Post Code No. 63)

(i) Weightage Marks: Candidates who possesses the required Qualifications, shall be awarded 75 marks as Weightage on the basis of the Academic Qualifications for the Post Code 63, as specified below –

S No	Academic Qualification	Maximum Weightage Marks
1	Percentage of Aggregate score of SSC or equivalent qualification	20 Marks (% of Score X 0.20)
2	Percentage of relevant Subject score of Intermediate	30 Marks (% of Score X 0.30)
3	Percentage of relevant subject score of Graduation (3 years Degree)	15 Marks (% of Score X 0.15)
4	Percentage of relevant subject Score of Post-Graduation (MSc)	10 Marks (% of Score X 0.10)
Total		**75 Marks**

Weightage marks for each Academic Qualification shall be rounded mathematically to 2 decimal places

(ii) Written Examination:-The number of Candidates to be admitted to attend the Written Examination (**for 25 marks**) would be in the ratio of 1:5 of the total number of vacancies covering all horizontal and vertical category reservations from among the Candidates as per merit of the Weightage marks as above or lesser – subject to availability of Candidates. The short-listed Candidates as per the Weightage Marks and as per the ratio shall be required to appear for the Written Examination in one paper (one hour duration) for the Post with the maximum of 25 Marks. The syllabus for the relevant paper is given in **Annexure – III**.

Note:

a) The minimum marks to be secured by the Candidates in order to qualify in the Written Examination is 40% for OC Posts including EWS, 35% for BC Posts and 30% for SC Posts / ST Posts / Orthopedically disabled Posts, out of 25 marks. Candidates who secure less than 40% marks in the Written Examination shall not be considered for the Posts notified under OC / EWS Category.

b) Paper will be descriptive in nature. The Candidates have to answer the questions using blue / black Ball point pen in the question-cum-answer booklet which will be supplied by TSLPRB.

(iii) Selection: The selection of the Candidates shall be made strictly on their relative merit, as obtained by them based on their aggregate score of the Written Examination (25 Marks) and Weightage Marks (75 Marks) aggregating to a total of 100 Marks. The local candidate reservations as provided in "The Telangana Public Employment (Organization of Local Cadres and Regulation of Direct Recruitment) Order, 2018" are not applicable to this selection. However, to avail of any vertical or horizontal reservation, the Candidate must be a local of Telangana State as defined in the Presidential Order, 2018 and having Community Certificate other relevant certificate issued by the competent authority of Telangana State.

13. INSTRUCTIONS TO BE READ CAREFULLY

The requisite educational qualification, experience, age and procedure to be followed for selection are given above. The Candidates must read the instructions given in this Notification as well as "instructions for filling the Online Application Form" (issued along with the Online Application Form) carefully in their own interest.

14. CERTIFICATES VERIFICATION

Candidates have to produce original documents (along with two sets of photocopies) and other particulars on the day of verification itself or as and when required and called for. If a Candidate fails to produce the certificates at the time of verification or if the particulars furnished in the Application Form do not tally with the original documents produced by the Candidate, then the candidature will be rejected / disqualified without any further correspondence.

15. LOCAL CANDIDATES

Reservation to local candidates and the provisions of Telangana State Public Employment (Organization of Local Cadres & Regulation of Direct Recruitment) Order, 2018 are not applicable as the Posts are State wide Posts. However, to avail of any vertical or horizontal reservation, the Candidate must be a local of Telangana State and should enclose the required Study Certificate(s) for the duration of education from I class to VII class issued by the Government School Authorities / Government Recognized School Authorities. Within the 7 (seven) years, in case the Candidate did not study in any Government or Government Recognized School, then, Residence Certificate (for such period) issued by Tahsildar of the concerned Mandal, should be enclosed for determining local status.

Note:

a) Single Certificate, whether of study or residence would suffice for enabling the Candidate to apply as a Local Candidate of Telangana State

b) Residence Certificate will not be accepted, if a Candidate has studied in any Government or Government Recognized Educational Institution up to 7th class. Such Candidates have to produce Study Certificates only, for such duration, invariably. Candidates, who acquired degree from Open Universities without studying in any School have to submit Residence Certificate/s only.

16. CAPTURE AND AUTHENTICATION OF BIOMETRICS

TSLPRB will take fingerprints and photographs of the Candidates at the time of attending Written Examination and whenever required.

17. SELECTION TO BE PROVISIONAL

The selection of the Candidates will be provisional and shall be subject to verification of the original certificates, antecedents and medical fitness.

18. INCLUSION IN QUALIFIED CANDIDATES LIST DOES NOT CONFER ANY RIGHTS

Mere admission to any test / examination or inclusion of a Candidate's name in Qualified Candidates List shall not confer on him / her any right for selection / appointment to such service, class or category. The provisional selection of the Candidates to the Posts mentioned in this Notification is subject to several other requirements mentioned herein.

19. VERIFICATION OF ANTECEDENTS

As per Clause (a) of Sub-section 1 of Rule 12 of Telangana State and Subordinate Service Rules, 1996, no person shall be eligible for appointment to any service by direct recruitment unless he / she satisfies the Selection Authority as well as Appointing Authority that –

i) He / She is of sound health, active habits to suit such service,

ii) His / Her Character and antecedents are such as to qualify him / her for such service.

iii) He / She must be a Citizen of India.

20. SUPRESSION / WITHHOLDING OF FACTS – NOT ADVISABLE

Suppression of material facts or withholding any factual information in the Application or Attestation Form (which would be supplied to the Candidates who are declared provisionally selected) will disqualify the Candidate from being considered for selection / appointment.

21. DISCHARGE FROM SERVICE AFTER APPOINTMENT

In the event of any information being found false or incorrect or if ineligibility is detected at any time even after appointment, such Candidate shall be discharged from service forthwith by the appointing authority without giving any notice.

22. DISQUALIFICATION FOR SELECTION / APPOINTMENT

The Candidates falling under the following categories shall be disqualified for selection / appointment, under these rules.

(i) Suppression of material facts (either in the Application or in the Attestation Form)

(ii) If the Candidate himself / herself or through his / her relatives or friends or any other has canvassed or endeavored to enlist extraneous support whether from official or non-official sources for his candidature.

(iii) A person (a) who has entered into or contracted a marriage with a person having a spouse living, or (b) who, having a spouse living, has entered into or contracted a marriage with any other person. Provided that the State Government may, if satisfied that such marriage is permissible under the personal law applicable to such person, exempt any person from the operation of this rule.

(iv) A person who has been dismissed from the services of a State or Central Government or from the service of any Central or State Government undertaking or local body or other authority.

(v) A person
   (a) who has been convicted for any offence in any court of law or
   (b) who has been criminal cases against him / her under investigation or pending trial at the time of his / her consideration for selection

(vi) A person who is involved in an offence involving moral turpitude

23. PENSION RULES

The employees who are appointed on or after 01-09-2004 are covered by the Contributory Pension Scheme. The Pension Scheme as per the State Revised Pension Rules, 1980 will not be applicable to them.

24. DECISION OF TSLPRB TO BEFINAL

TSLPRB reserves all the rights to themselves with regard to taking of decisions pertaining to acceptance or rejection of Application/s, procedure of Certificates Verification, conduct of Examinations (especially as regards modifying and rescheduling Examinations), Antecedent Verification, Medical Examination and Selection as per Rules and decision/s of TSLPRB shall be final in all these aspects. Candidates are advised to visit the website of TSLPRB regularly to keep themselves updated until completion of the recruitment process. ***Candidates are further advised not to rely on rumours and false propaganda resorted to by persons with vested interests through media / social media platforms.*** TSLPRB website information is final, legitimate and definitive as far as correspondence / communication with the Candidates is concerned. No individual correspondence by any other means will be entertained under any circumstances.

Sd/-
(V V SRINIVASA RAO, IPS)
CHAIRMAN TSLPRB
HYDERABAD

ANNEXURE I

SYLLABUS FOR THE POSTS OF SCIENTIFIC OFFICERS / SCIENTIFIC ASSISTANTS

A) SCIENTIFIC OFFICER / SCIENTIFIC ASSISTANT (PHYSICAL & GENERAL)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime – various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: PHYSICS

1. MECHANICS OF PARTICLES

Laws of motion, motion of variable mass system, Equation of motion of a rocket. Conservation of energy and momentum, Collisions in two and three dimensions, Concept of impact parameter, scattering cross-section, Rutherford scattering.

2. MECHANICS OF RIGID BODIES

Definition of rigid body, rotational kinematic relations, equation of motion for a rotating body, angular momentum, Euler equations and its applications, precession of a top and Gyroscope.

3. CENTRAL FORCES

Definition with examples, conservative nature of central forces, conservative force as a negative gradient of potential energy, equation of motion under a central force. Derivation of Kepler's laws.

4. GENERAL WAVES & OSCILLATIONS

(a) Simple Harmonic oscillations

Simple harmonic oscillator and solution of the differential equation-Physical characteristics of SHM, torsion pendulum-measurements of rigidity modulus, compound pendulum-measurement of 'g', Principle of superposition, combination of two mutually perpendicular simple harmonic vibrations of same frequency and different frequencies and Lissajous figures.

(b) Damped and forced oscillations

Damped harmonic oscillator, solution of the differential equation of damped oscillator. Energy considerations, comparison with un-damped harmonic oscillator, logarithmic decrement, relaxation time, quality factor, differential equation of forced oscillator and its solution, amplitude resonance and velocity resonance.

(c) Vibrating strings

Transverse wave propagation along a stretched string, general solution of wave equation and its significance, modes of vibration of stretched string clamped at ends, overtones and harmonics. Energy transport and transverse impedance.

(d) Vibrations of bars

Longitudinal vibrations in bars-wave equation and its general solution. Special cases (i) bar fixed at both ends (ii) bar fixed at the midpoint (iii) bar fixed at one end (iv) tuning fork.

5. OPTICS

(a) Aberrations

Introduction of monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses (i) in contact and (ii)separated by a distance.

(b) Interference

Principle of super position coherence-temporal coherence and spatial coherence-conditions for interference of light. Fresnel's biprism-determination of wavelength of light-change of phase on reflection. Oblique incidence of a plane wave on a thin film due tore flected and transmitted lights (cosine law) -colors of thin films- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer, Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

(c) Diffraction

Introduction, Distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction -Diffraction due to single slit Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating). Resolving power of grating, Determination of wavelength of light in normal incidence position using diffraction grating, Fresnel's half period zones - area of the half period zones - zone plate-comparison of zone plate with convex lens, differences between interference and diffraction.

(d) Polarization

Polarized light: methods of polarization, polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, determination of specific rotation by Laurent's half shade polarimeter-Babinet's compensator - Linear, elliptical and circular polarization.

(e) Fiber Optics

Introduction- different types of fibers, rays and modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

6. THERMODYNAMICS

(a) Thermodynamics

Introduction- law of thermodynamics, Kelvin's and Clausius statements-Entropy, physical significance -Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram- Change of entropy of a perfect gas- change of entropy when ice changes into steam.

(b) Thermodynamic potentials and Maxwell's equations
Thermodynamic potentials-Derivation of Maxwell's thermodynamic relations-Clausius-Clapeyron's equation- Derivation for ratio of specific heats-Derivation for difference of two specific heats for perfect gas. Joule Kelvin effect-expression for Joule Kelvin coefficient for perfect and van der Waal's gases.

(c) Low temperature Physics
Joule Kelvin effect - Porous plug experiment Joule expansion-Distinction between adiabatic and Joule Thomson expansion-Expression for Joule Thomson cooling-Liquefaction of helium, Kapitza's method- Adiabatic demagnetization, Production of low temperatures.

(d) Quantum theory of radiation
Blackbody-Ferry's black body-distribution of energy in the spectrum of black body-Wein's displacement law, Wein's law, Rayleigh-Jean's law-Quantum theory of radiation-Planck's law-Measurement of radiation-Types of pyrometers-Disappearing filament optical pyrometer-experimental determination Angstrom, heliometers determination of solar constant, Temperature of Sun.

7. ELECTROMAGNETISM

(a) Electric and magnetic fields
Biot-Savart's law, explanation and calculation of B due to long straight wire, a circular current loop and solenoid - Lorentz force. Electromagnetic Induction and Electromagnetic waves
Faraday's law - Lenz's law- Self and mutual inductance, displacement current - Maxwell's equations - Maxwell's plane wave equation, Transverse nature of electromagnetic waves.

8. MODERN PHYSICS

(a) Atomic Physics
Drawbacks/limitations of Bohr's atomic model- Somerfield's Modification of Bohr's Theory, Somerfield's elliptical orbits-relativistic correction. Wave particle duality and concept of Matter waves, de Broglie's hypothesis – wavelength of matter waves, Davisson and Germer experiment. Heisenberg's uncertainty principle -Complementarity principle of Bohr, X-rays and Lasers Theory.

(b) Nuclear Physics
Basic ideas of nucleus size, mass, binding energy. Liquid drop model and Shell model(qualitative aspects only) – Magic numbers. Radioactive decay, Alpha decay, B-decay, Energy kinematics for B-decay, neutrino hypothesis.

(c) Solid state Physics
Basic information of crystalline structure, etc.,

(d) Electronics
Semi-conductors, PN junction, diode, transistors etc.,
Practical Information of all Instruments.

UNIT-III: BALLISTICS

1. HISTORY AND BACKGROUND OF FIREARMS

Characteristics and classification of Firearms based on various parameters – Identification of origin – Improvised/Country made/ Imitative Firearms and their constructional features.

2. PRINCIPLES AND PRACTICE OF IDENTIFICATION OF FIREARMS

Different types of marks produced during firing process on cartridge and on Bullet – Class and Individual characteristics.

3. AMMUNITION & ITS CONSTRUCTIONAL PARTS

Classification of ammunition on the basis of constructional features – Safety aspects for handling firearms and ammunition – Types of Ammunition.

4. GUNSHOT RESIDUE

Composition of GSR depending upon propellant & primer mixtures, GSR distribution – Chemical, Instrumental methods of GSR analysis.

5. INTERNAL AND EXTERNAL BALLISTICS

Introduction - Various types of bullets and compositional aspects – Direction of fire – Range of Fire – Projectile velocity determination – Theory of recoil – Trajectory determination – Terminal Ballistics – Effect of projectile on hitting the target – Wound Ballistics.

6. INSTRUMENTAL TECHNIQUES USED FOR BALLISTICS EVIDENCE ANALYSIS

Bore scope, Comparison Microscope, Scanning Electron Microscope, EDXRF, IBIS.

UNIT-IV: DOCUMENTS

1. GENERAL OPTICS AND WAVE OPTICS

(a) Aberrations

Introduction of monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses (i) in contact and (ii) separated by a distance.

(b) Interference

Principle of super position coherence-temporal coherence and spatial coherence-conditions for interference of light. Fresnel's biprism-determination of wavelength of light-change of phase on reflection. Oblique incidence of a plane wave on a thin film due to reflected and transmitted lights (cosine law) -colors of thin films- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer, Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

(c) Diffraction

Introduction, Distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction -Diffraction due to single slit Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating). Resolving power of grating, Determination of wavelength of light in normal incidence position using diffraction grating, Fresnel's half period zones - area of the half period zones - zone plate-comparison of zone plate with convex lens, differences between interference and diffraction.

(d) Polarization

Polarized light: methods of polarization, polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, determination of specific rotation by Laurent's half shade polarimeter-Babinet's compensator - Linear, elliptical and circular polarization.

(e) Fiber Optics

Introduction- different types of fibers, rays and modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

B) SCIENTIFIC OFFICER / SCIENTIFIC ASSISTANT (CHEMICAL)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protectingasceneofcrime–variousstepsinvolved,contaminationissues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: GENERAL CHEMISTRY

1. ORGANIC CHEMISTRY

(a) Acyclic Hydrocarbons
Alkanes: preparation: Corey-House reaction, Wurtz reaction, Kolbe synthesis. Chemical reactivity - Halogenation,

(b) Alkenes
Preparation of alkenes (a) by dehydration of alcohols (b) dehydrohalogenation of alkyl halides (c) by dehalogenation of 1,2 dihalides, Zaitsev's rule. Properties: Addition of HX, Markonikov's rule, addition of H_20, HOX, $H_2Sa_4$with mechanism and addition of HBr in the presence of peroxide Oxidation (cis - additions) - hydroxylation by $KMn0_4$, °$s0_4$, trans addition- peracids ,ozonolysis -location of double bond.

(c) Alkynes
Preparation by dehydrohalogenation of vicinal dihalides, dehalogenation of tetrahalides. Physical Properties: Acidity of terminal alkynes. Chemical reactivity-electrophilic addition of X_2, HX, H2O. Oxidation and reduction Alicyclic Hydrocarbons Nomenclature, preapartion by Freunds method, Dickmann, heating dicarboxylic metal salts. Stability of cycloalkanes - Baeyer strain theory. Conformational structures of cyclohexane.

(d) Aromatic Hydrocarbons

Aromaticity - definition, Huckel's rule - application Reactions - General mechanism of electrophilic substitution, mechanism of nitration, sulphonation, and halogenation, Friedel Craft's alkylation (polyalkylation) and acylation. Orientation of aromatic substitution.

(e) Arenes

Preparation of alkyl benzenes by Friedel Craft's alkytation, Friedel Craft's acylation followed by reduction, Wurtz-Fittig reaction. Chemical reactivity: Ring substitution reactions, side chain substitution reactions and oxidation.

(f) Halogen compounds

Nomenclature and classification. Chemical reactivity - reduction, formation of RMgX, Nucleophilic substitution reactions - classification into SNi and 5N2. Mechanism and energy profile diagrams of SNi and SN2 reactions. Stereochemistry of SN2 (Walden Inversion) 2-bromobutane, SN1(Racemisation) 1-bromo-l-phenylpropane explanation of both by taking the example of optically active alkyl halide

(g) Alcohols

Preaparation of alchols using Griganard reagent, Ester hydrolysis, Reduction of Carbonyl compounds, carboxylic acids and esters. Physical properties: H-bonding, Boiling point and Solubility, Reactions with Sodium, HX/ZnCl2 (Lucas reagent), esterification, oxidation with PCC, alit. KMn04, acidic dichromates,

(h) Phenols

Preapartion: (I) from diazonium salts of anilines, (ii) from benzene sulphonicacids and (iii) Cumene hydroperoxide method.Properties: Acidic nature, formation of phenoxide and reaction with R-X, electrophilic substitution nitration, halogenation and sulphonation. Riemer Tiemann reaction, Gattermann-Koch reaction, Azo-coupling reaction, SchottonBaumannraction.

(i) Ethers and epoxides

Nomenclature, preparation by (a) Williamson's synthesis. Physical properties, Chemical properties -action of conc. H_2SO_4 and HI

(j) Carbonyl compounds

Nomenclature and isomerism. Preparation of aldehydes a ketones from acid chloride, nitrites, oxidation of arenes. Physical properties - absence of Hydrogen bonding. Keto-enol tautomerism, polarisability of carbonyl groups, reactivity of the carbonyl groups in aldehydes and ketones. Chemical reactivity: Addition of [a] $NaHS0_j$(b) HCN (c) RMgX (d) Nitie) RNHIMNH2OH(g) PhNHNH2(h) 2,4DNP (Schiff bases). Addition of H_zO to form hydrate addition of alcohols. Base catalysed reactions - Aldot, Cannizaro reaction, Perkin reaction, Benzoin condensation, haloform reaction, Knoevengeal condensation. Oxidation reactions - KMn04 oxidation , reduction catalytic hydrogenation, Ctemmenson's reduction, Wolf-kishner reduction, reduction with LAH, $NaBH_4$. Analysis - 2,4 -DNP test, I ollen's test, Fehlings test, Scihff'stest, haloform test.

(k) Carboxylic acids

Nomenclature, classification. Preparation a) Hydrolysis of Nitrites, b) Carbonation of Grignard reagent. Oxidation of Arenes. Kolbe reaction. Physical properties- hydrogen bonding, dimeric association, acidity - strength of acids. Chemical properties - Reactions involving H, OH and COON groups -salt formation, anhydride formation, Acid halide formation, Esterification a Amide formation. Reduction of acid to the corresponding primary alcohol - via ester or acid chloride. Degradation of carboxylic acids by Huns Diecker reaction, Schmidt reaction .Arndt - Eistert synthesis, Halogenation by Hell-Volhard Zelensky reaction. Carboxylic acid Derivatives - Reactions of acid halides, Acid anhydrides, acid amides and esters

(l) Nitrogen compounds

Nomenclature and classification of nitro hydrocarbons. Preparation, reactivity, Nefreaction, Mannich reaction, Michael addition, Reduction reaction of Nitrobenzenes in different media.

Amines: Nomenclature, classification. Preparation : Gabriel synthesis, Hoffman's bromamide reaction. Physical properties-basic character. Chemical Properties: a) Alkylation bi Acylation c) Carbylamine reaction d) Hinsberg separation, reaction with Nitrous acid. Aromatic amines - Bromination, diazotisation. Synthetic utility of diazonium salts

(m) Cyanides and isocyanides

Nomenclature and structure. Preparation of cyanides from a) Alkyl halides b) from amides c) from aldoximes. Preparation of isocyanides from Alkyl halides and Amines. 2. Properties of cyanides and isocyanides, a)hydrolysis b) addition of Gragnard reagent iii) reduction.

(n) Biomolecules

Car bohydrates: classification, monosaccharide, structures of pentose and hexose's. anorneric carbon, mutarotation, simple chemical reactions of glucose, disaccharides: reducing and non-reducing sugars-sucrose, maltose and lactose, polysaccharides: elementary idea of structures of starch and cellulose;

Proteins: amino acids, peptide bond, polypeptides, proteins, structure of proteins -primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions.

(o) Nucleic Acids: DNA and RNA

Polymers: Classification of polymers, General method of polymerization addition and condensation, free radical, cationic and anionic polymerization, copolymerization, natural rubber, vulcanization of rubber, synthetic rubbers.

Basics of drugs and formulation analysis : Weights, balances, importance of analysis, quality control and quality assurance, analytical methods (classification, validation parameters), requirements chemicals (types, purification, checking purity), glass wares (types, calibration, cleaning), sampling techniques, sampling error minimization. Units of concentrations. Errors science, errors minimization.

2. INORGANIC CHEMISTRY

(a) Chemical bonding

Molecular orbital theory: Shaped and sign convention of atomic orbitals. Modes of overlapping. Concept of σ and π bonds. LCAO concept. Types of molecular orbitals- bonding, antibonding and non bonding. MOED of homo nuclear diatomics – H_2, N_2, O_2, O^{2-}, O_2^{2-}, F_2 (unhybridized diagram only) and hetero nuclear diatomics CO, CN, NO, NO^+ and HF. Bond order, stability and magnetic properties.

(b) s-block elements

General Characteristics of groups I and II elements, Diagonal relationship between Li and Mg, Be and Al.

(c) p-block elements

Group-13: Synthesis and structure of diborane, Boron nitrogen compounds (B3N3H6 and BN),
Group-14: Carbides-Classification – ionic, Covalent, interstitial – synthesis, Industrial application. Silicones-Preparation- a) direct silicon process b) use of Grignard reagent Classification – straight chain, cyclic and cross-linked.
Group-15: Synthesis of ammonia, Oxy acids of nitrogen and phosphorous.
Group-16: Manufacture of H_2SO_4, Oxy acids of Sulphur.
Group-17:Inter halogens-classification-general preparation-structures of AB, AB_3, AB_5 and AB_7 type reactivity. Comparison of Pseudo halogens with halogens. Chemistry of Zero group elements. General preparation, structure, bonding and reactivity of Xenon compounds- Oxides, Halides and Oxy-halides.

(d) Chemistry of d-block elements

Characteristics of d-block elements with special reference to electronic configuration variable valence, ability to form complexes, magnetic properties & catalytic properties.
Stability of various oxidation states and comparative treatment of second and third transition series with their 3d analogues.

(e) Chemistry of Lanthanides

Electronic structure, oxidation state, ionic and atomic radii-lanthanide contraction-cause and consequences, -complex formation. Magnetic properties-, Colour and spectra, Chemistry of actinides- electronic configuration, oxidation state, actinide contraction, colour and complex formation. Comparison with lanthanides.

(f) Theories of bonding in metals

Valance bond theory, Explanation of metallic properties and its limitations, Free electron theory, Band theory, formation of bands, explanation of conductors, semiconductors n-type and p-type, extrinsic & intrinsic semiconductors, and insulators.

(g) Coordination Compounds

Coordination complexes. IUPAC Nomenclature Werner's theory, Sidgwick's EAN rule and limitations, Valance bond theory (VBT) - postulates and application to (a) tetrahedral complexes $[Ni(NH_3)_4]^{2+}$, $[NiCl_4]^{2-}$ and $[Ni(CO)_4]$, (b) octahedral complexes $[Fe(CN)_6]^{4-}$, $[Fe(CN)_6]^{-3}$, $[Fe F_6]^{4}$, $[Co(NH_3)_6]^{3+-}$, $[CoF_6]^{-3-}$, Limitations of VB, isomerism in coordination compounds, stereo isomerism –(a) geometrical isomerism in (i) square planar metal complexes of the type $[MA_2B_2]$, $[MA_2BC]$, $[M(AB)_2]$, [MABCD]. (ii) Octahedral metal complexes of the type $[MA_4B_2]$, $[MA_2BC]$, $[M(AA)_2B_2]$, $[MA_3B_3]$ using suitable examples, (b) Optical isomerism in (i). tetrahedral complexes [MABCD], (ii). Octahedral complexes $[M(AA)_2B_2]$, $[M(AA)_3]$ using suitable examples. Structural isomerism: ionization linkage coordination ligand isomerism using suitable examples.

(h) Cements

Introduction, Classification of cement and properties, chemical composition of cement, Standards, Manufacturing of Portland cement, chemical constituents of Portland cement, Setting and hardening of cement, PCC & RCC.

3. PHYSICAL CHEMISTRY

(a) Atomic structure and elementary quantum mechanics

Planck's radiation law, De Broglie's hypothesis. Heisenberg's uncertainty principle, Schrodinger's wave equation and its importance. Physical interpretation of the wave function, significance of Ψ and Ψ^2. Schrodinger wave equation for H-atom. (No derivation)

(b) Gaseous State

Deviation of real gases from ideal behavior. van der Waals equation of state. The van der Waal's equation and critical state. Relationship between critical constants and van der Waal's constants. The law of corresponding states, reduced equation of states. Joule Thomson effect and inversion temperature of a gas. Liquifaction of gases: i) Linde's method based on Joule Thomson effect ii) Claude's method based on adiabatic expansion of a gas

(c) Dilute Solutions & Colligative Properties

Dilute Solutions, Colligative Properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination. Osmosis-determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods for determining various colligative properties. Abnormal molar mass, Van'thoff factor, degree of dissociation and association of solutes.

(d) Solid state Chemistry

Symmetry elements in crystals, Law of rationality of indices. Definition of space lattice, unit cell. Bravais Lattices and Seven Crystal systems (a brief review). X-ray diffraction by crystals; Bragg's equation. Miller indices.

(e) Symmetry of molecules

Symmetry operations and symmetry elements in molecules. Definition of Axis of symmetry types of Cn, Plane of symmetry (σh, σv, σd) Center of symmetry and improper rotational axis of symmetry (Sn).

(f) Phase Rule

Meaning of the terms - Phase, Component and degrees of freedom, Gibb's Phase rule, phase equilibria of one component system - water system.

(g) Colloids & surface chemistry

Definition of colloids. Classification of colloids. Solids in liquids (sots): preparations, Protective action. Hardy-Schultz law, Gold number. Liquids in liquids (emulsions): Types of emulsions, preparation and emusifier. Liquids in solids (gels); Classification, preparations and properties, General applications of colloids. Adsorption: Types of adsorption, Factors influencing adsorption. Freundlich adsorption isotherm. Langmuir theory of unilayer adsorption isotherm. Applications

(h) Chemical Equilibrium

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, taw of mass action, equilibrium constant, factors affecting equilibrium- Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, Henderson equation, hydrolysis of salts (elementary idea), buffer solution, solubility product, common ion effect (with illustrative examples)

(i) Electrochemistry & EMF

Electrical transport - conduction in electrolyte solutions, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of specific and equivalent conductance with dilution. Migration of ions and Kholrausch's law, Arrhenius theory of electrolyte dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, Debye-Flucket-Onsagar's equation for strong electrolytes (elementary treatment only). Transport number, determination by Hittorf's method. Applications of conductivity measurements: Determination of degree of dissociation, determination of Ka of acids, determination of solubility product of a sparingly soluble salt, conductometric titrations. Nernst equation, cell EMF and single electrode potential, standard Hydrogen electrode - reference electrodes (catamelelectrode) - standard electrode potential, sign conventions, electrochemical series and its significance. Applications of EMF measurements, Determination of pH quinhydrone electrode, Solubility product of AgCl. Potentiometric titrations.

(j) Chemical Kinetics

Introduction, rate of reaction, variation of concentration with time, rate laws and rate constant. Specific reaction rate. Factors influencing reaction rates: effect of concentration of reactants, effect of temperature, effect of pressure, effect of catalyst with simple examples, order of reaction. First order reaction, derivation of equation for rate constant. Characteristics of first order reaction. Units for rate constant. Half-life period, graph of 1^{st} order reaction,

Examples - Decomposition of H_20_2. Pseudo first order reaction, Hydrolysis of methyl acetate, Second order reaction, derivation of expression for 2^{nd} order rate constant, examples-Saponification of ester, $20_3 \rightarrow 30_2$, $C_2H_4+H_2 \rightarrow C_2H_6$. Units for rate constants, half-life period and second order plots.

(k) Thermodynamics

A brief review of -Energy, work and heat units, definition of system, surroundings. I law of thermodynamics statement, extensive properties and intensive properties, state function, path functions Work of expansion and heat absorbed as path function. Expression forwork of expansion, Heat changes at constant pressure and heat changes at constant volume. Enthalpy, Heat capacities at constant pressure and constant volume. Derivation Cp-Cv = R. Isothermal adiabatic processes. Reversible and irreversible processes. Reversible change and maximum work. Derivation of expression for maximum work for isothermal reversible process. Internal energy of an ideal gas. Joules experiment and Joule-Thompson coefficient. Adiabatic changes in ideal gas P-V curves for isothermal and adiabatic processes. Kirchhoff s equation and problems. Limitations of I law and need for **II** law. Statement of II law of thermodynamics. Cyclic process. Heat engine, Carrot's theorem, Carnot's cycle.

(l) Entropy

Definition from Carnot's cycle. Entropy as a state function. Entropy as a measure of disorder. Sign of entropy change for spontaneous and non-spontaneous processes Et equilibrium processes. Entropy changes in i), Reversible isothermal process, ii) reversible adiabatic process, iii). phase change, iv). reversible change of state of an ideal gas. Entropy of mixing, inert perfect gases. Free energy Gibb's function (G) and Helmholtz's function (A) as thermodynamic quantities. Concept of maximum work and net work AG as criteria for spontaneity.

(m) Analytical Chemistry

Analytical Techniques: Introduction Types of analysis - Physical, Chemical and instrumentation. Physical analysis -Specific gravity, Melting point, Boiling point, Crystallization. Purification of compounds etc. Chemical analysis - Quantitative and Qualitative analysis of organic and inorganic compounds. Instrumental analysis -Spectroscopic, Chromatographic PH measurement, Conductivity, Turbidity etc

(n) Volumetric analysis (Titrimetric analysis)

Acid-base titrations: Relative strength and its effect on titration, common ion effect, pH, Henderson-Hesselbach equation, buffers, neutralization curve, acid bas indicators, theory of indicators, back titrations, biphasic titrations, pharmacopoeia) applications, hydrolysis of salts, ionic products of water and law of mass action; Redox titrations : Theory of redox titrations,

redox indicators, types of redox titrations, iodometry, cerrimetry, mercury metry, diazotization nitrite titrations, 2,6-dichlorophenol indophenol titrations, titration curve and calculations of potentials during course of titrations.; Argentometric or precipitation titrations : Mohrs, Fajans and Volhard methods; Nonaqueous titrations : Nonaqueous solvents, titrants and indicators. Differentiating and leveling Solvents; Complexometric titrations: Theory of the titrations, titrant, indicators and pharmacopoeia) applications; miscellaneous titrations: Karl-Fischer titrations, Kjeldahl method.

(o) Gravimetric analysis: Stability, solubility products, types of precipitations, precipitation techniques, pharmacopoeial applications.

UNIT-III: FORENSIC TOXICOLOGY

1. GENERAL POISONS

(a) **Types of Poisons** - Pesticides, Drugs, Volatile Poisons, Metallic Poisons, Alkaloid Poisons.
(b) Sample collection and preservation of toxicological exhibits in fatal and survival cases.
(c) **Sample preparation** - Isolation and clean-up procedures in toxicological analysis.
(d) **Storage of samples** - Signs and symptoms of poisoning-Toxicological investigations and examination of the material objects- Interpretation of toxicological data.
(e) **Extraction of Poisons:** Volatile Poisons and their detection, Alkaloid Poisons and their detection, Metallic Poisons and their detection, Quantification of Poisons.
(f) **Identification and quantification of poisons**: by physical, chemical, chromatographic, spectrophotometric**,** immunoassay methods.

UNIT-IV: NARCOTICS

1. CLASSIFICATION OF NDPS DRUGS

Narcotic Drugs, Psychotropic Substances, Stimulants, Depressants, Plant Narcotic Drugs etc.

2. FORENSIC EXAMINATION OF NDPS

Opiates, Cannabis, Cocaine, Amphetamines, Benzodiazepines, Methaqualone, Barbiturates, LSD, Psilocybin, Psilocin, Mescaline, Cathine, Cathinone, Synthetic cathinones, Piperazines

3. CLANDESTINE LABORATORY INVESTIGATION

Drug profiling-NDPS Act and latest amendments

4. QUANTIFICATION OF DRUGS BY USING INSTRUMENTAL TECHNIQUES:

(a) HPLC
(b) LC-MS
(c) LC-MS/MS

UNIT-V: FUELS AND EXPLOSIVES

1. TYPES OF CASES / EXHIBITS

(a) Preliminary screening-presumptive tests (colour and spot tests) -Examination procedures involving standard methods and instrumental techniques.
(b) Qualitative and quantitative forensic analysis of inorganic and organic materials-Chemical fertilizers-Insecticides-Metallurgical analysis- Natural products- Industrial chemicals-Sulphuric, Nitric and Hydrochloric acids, Sodium, Potassium hydroxide, Ammonium nitrate, Potassium chlorate, Organic solvents like Methanol, Ethanol, Acetone, Chloroform and Ether. Organic chemicals like Acetanilide, P-Aminophenol, Nitrobenzene etc.,

2. EXAMINATION OF PETROLEUM PRODUCTS

(a) Distillation and fractionation: various fractions and their commercial uses
(b) Standard method of analysis of petroleum products: Analysis of petroleum products for adulteration.
(c) Chemistry of fire: Investigation and evaluation of fires- Causes of fire- Analysis of arson residues by conventional and instrumental methods.
(d) Analysis of trace evidence: Dyes, Trap related evidence materials, Paints , Oils, Fats, Greases, Industrial dusts.

3. CLASSIFICATION OF FUELS

(a) Calorific value, Characteristics of Good fuel, Producer Gas, Water Gas (or Blue Gas) Analysis of fuel Gas

4. ANALYSIS OF OILS AND FATS

(a) Saponification value, Iodine Value, Thiocyanogen value, ketone, perfume rancidity.
(b) Soaps and detergents: composition of soaps. Determination of low level surfactants, determination of detergent alkylates by Mass Spectrometry.

5. EXPLOSIVES AND EXPLOSION RESIDUES

(a) Composition.
(b) Classification and characteristics of explosives, pyrotechniques.
(c) IEDs: Explosion process and effects- approach to scene of explosion- post-blast explosion residue collection.
(d) Systematic analysis of explosives and explosion residue in the laboratory: using chemical and instrumental techniques.
(e) Precaution during storage of explosives: blast fuses, recent uses of explosives. Propellants: Rocket propellants-principle of rocket Propulsions, classification of propellants- solid propellants, composite propellants, liquid propellants, mono-propellants, bipropellants; Difference between solid propellants and liquid propellants.

UNIT-VI: INSTRUMENTALTECHNIQUES

1. CHROMATOGRAPHY TECHNIQUES

Types of Chromatography

(a) Thin layer Chromatography
(b) Liquid Chromatography
(c) Gas Chromatography
(d) HPTLC

2. METHODS OF QUANTIFICATION BY HPLC, LCMS AND LCMS / MS

(a) Size Exclusion Chromatography: Principles of gel — filtration Chromatography, Instrumentation, retention behavior, resolution, selection of gel type, applications, Ion exclusion — Principle and applications. Supercritical fluid chromatography (SFC) —Instrumentation of SFC, stationary and mobile phases used in SFC, Detectors, Advantages of SFC. Technique and applications of SFC.

(b) Mass Analyzers: Quadruple, Ion traps, Time of flight (TOF) mass analyzers: Tandem Mass Spectrometry, Hyphenated Techniques: GC-MS Principle, instrumentation.

(c) LC-MS- principle, Instrumentation — Interfaces-Moving belt interface, particle beam interface, thermospray interface, Electrospray interface, atmospheric pressure chemical ionization interface.ICP — MS - Principle Instrumentation, and Applications. Matrix-assisted laserdesorption/ionization-Time of flight Mass spectrometry (MATD1-TOF-MS): Principle, Matrix Sample Preparation for MALDI-MS-Dried droplet Crystallization, Thin layer method, Sandwich Crystallization, Instrumentation, Applications.

3. SPECTROSCOPY

(a) **U.V Spectroscopy**

(b) **IR Spectroscopy** – IR Vs FTIR –Instrumentation Principles and application. Significance in structural elucidation of organic compounds.

(c) **Raman Spectroscopy**- Raman effect-stokes and antistokes lines,

Instrumentation, conditions, Raman spectra of Diatomic molecules, polyatomic molecules, Rule of Mutual Exclusion principle, structure elucidation by Raman spectroscopy.

(d) **NMR Spectroscopy**- Instrumentation, number of signals, chemical shifts, internal standards, Shielding and De-shielding effects, factors influencing chemical shift, splitting of the signals, Spin- spin coupling, Nuclear overhauser effect ,NMR spectra at more than one radio frequency, Coupling constant, Proton exchange reactions, Deuterium exchange reactions, Interpretation of NMR spectra.

(e) **13 C NMR spectroscopy**- Types of ^{13}C turn- spectra: undecoupled, protondecoupled and off-resonance decoupled (ORD) spectra.^{13}C chemical shifts, factors affecting the chemical shifts, chemical shifts of organic compounds. Calculation of chemical shifts of alkanes, alkenes and alkynes. Homonuclear and heteronuclear coupling. Applications of ^{13}C-NMR spectroscopy: ^{13}C-NMR spectral editing techniques: principle and applications of APT, INEPT and DEPT methods. ii) 2D-NMR spectroscopy

C. SCIENTIFIC OFFICER / SCIENTIFIC ASSISTANT (BIOLOGY / SEROLOGY)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime – various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: LIFE SCIENCE

1. GENETICS

(a) Genes, Genetic code, eukaryotic gene expression, regulation of gene expression, alleles, karyo types, genetic disorders, mutation types and their causes.

(b) Mendel's Law of inheritance, Extension of Mendelian principles - co-dominance, incomplete dominance, linkage and crossing over

2. FORENSIC DNA

(a) History of DNA Typing, human genetics, heredity, alleles, mutations, population genetics, Hardy Weinberg Law, Variations and Polymorphism. Mitosis, meiosis, Cell theory, cell structure and function in eukaryotes.

(b) Structure of DNA, functions and its properties**,** Humangenome, History of DNA fingerprinting, utility of DNA fingerprinting in crime investigation in parentage dispute, wildlife, veterinary and agriculture etc., Legal and Ethical issues. Collection, preservation and transport of samples viz, semen, saliva, hair, bone, flesh etc for DNA profiling, DNA methodology for isolation, typing, interpretation of results, STR analysis, polymerase chain reaction, types and its application, mitochondrial analysis, determination of sex & species and racial origin.

(c) Nucleic Acids: Structure and functions, Isolation of DNA and RNA from biological sources. Physiochemical properties of nucleic acids, melting of DNA, Cot curve, classification of DNA based on cot curve. Chemical reactions of DNA and RNA. DNA Replication and Protein Synthesis: Structure and types of DNA, replication mechanism, enzymes involved in replication, Biosynthesis of Proteins

(d) Properties, classification and functions of carbohydrates, proteins, nucleic acids and lipids. pH, buffer and buffer system. Enzyme, catalysis, enzyme regulation, enzyme inhibition, iso-enzymes.

(e) Types of DNA and their role in human identification. Sequencing of DNA: Maxam Gilbert method, Sanger method. Chargaff's rule, secondary structure of DNA. Watson and Crick model; B and Z DNA, other models of DNA structure. Other secondary structural features in DNA, stem loop structure, palindrome sequences, cruciform. DNA protein interaction; zinc finger, leucine zipper, helix-turn-helix, other motifs, DNA bending and kinks.

(f) Extraction of DNA from different types of biological samples, DNA extraction methods. Determining quality and quantity of DNA samples; contamination issues.

(g) DNA amplification: Principle, Methodology, types of Polymerase Chain Reaction (PCR), PCR inhibitors and solutions, PCR primers and primer designing, applications of PCR in cloning and forensic science.

(h) Electrophoretic techniques: Polyacrylamide gel electrophoresis, sodium dodecyl sulphate polyacrylamide gel electrophoresis, Agarose gel electrophoresis, Isoelectric focusing, Capillary electrophoresis. Visualizing proteins and DNA.

(i) General characteristics of Skeletal, muscle, nervous system in human body and human hair.

(j) Wild life DNA Analysis and its applications in Forensic Science.

(k) Forensic DNA profiling -International, national and state level cases.

3. HUMANPHYSIOLOGYANDPATHOLOGY

(a) Physiology of digestive system. Saliva and gastric juices, digestion and absorption.
(b) Physiology of human circulatory system – Heart structure, double circulation, cardiac cycle and its regulation, blood pressure, composition of blood, mechanism of blood clotting, Anti coagulant for blood.
(c) Physiology of human reproductive system.
(d) Human male and female reproductive systems, gamete formation, fertilization and implantation.

4. FORENSIC SEROLOGY

Types and distribution of body fluids: Blood, blood stains, semen, seminal stains, urine (formation, composition, properties); amniotic fluid, sweat (formation, composition, properties); saliva, vaginal fluid, epithelial cells, etc., definition and their analysis and forensic significance.

5. SEROLOGICALTECHNIQUES

(a) Electrophoresis Methods
(b) Presumptive & Confirmatory Tests for blood
(c) Identification of Blood Properties Blood Grouping

6. FORENSIC BIOLOGY

(a) Tissues of the body: Epithelia and glands. Classification of epithelia/glands and their functions. Connective tissues. Cartilage-structure and types, Gross structure of bones, formation of bone, fracture and healing.

(b) Skin and its Appendages: Structure and functions, pigmentation, blood and nerve supply. Structure of hair, hair cycle-anagen, catagen, telogen. Sebaceous glands, nails, sweat gland. Skeletal muscle, striated and non-striated, muscle. Organization of muscle fibres. Tendons and Nerves.

(c) Body Fluids & their stains: Introduction to various types of body fluids, Composition, Physical pattern and Identification of seminal stains: presumptive tests (U.V. test, Florence test, Spermine (Barberio) test, Choline test, Acid Phosphatase test) and confirmatory test including Azoospermic semen stain (p-30, Prostate-specific antigen or PSA, Microscopic examination), Morphological structure of spermatozoa of human and animals, Identification of lochial and menstrual blood stains by microscopic, biochemical and immuno-electrophoretic method, Identification and examination of other body fluids / stains–vaginal, saliva, urine, feces, vomit etc., Secretor and non–secretor. Identification and examination of body tissues of human / animal.

(d) Hair and Fibers: Morphology and Biochemistry of human / animal hair, determination of origin, race, sex and site.

(e) Types and Identification of Fibers: Man-made and Natural fibers and its Forensic significance.

(f) Tools And Techniques: Microscopy-Basic principles and working of simple and compound, comparison, phase-contrast, stereo-zoom, polarizing, Fluorescence, Scanning Electron & transmission electron microscope and U.V. light sources.

(g) Immunological techniques: General principles, Precipitin reaction, Gelimmune-diffusion, Immuno-electrophoresis, Radio Immuno Assay, ELISA, Immune system, immune response, innate and acquired immunity, antigens, antibodies, Immunoglobulins, raising of anti-sera, Lectins-their forensic significance. Buffers and biological reagents, Methods of sterilization employed for biological work.

(h) Planktonic study: Various types of phytoplankton, diatoms and their forensic importance. Different kinds of diatoms and their morphology, Importance of diatom test in drowning cases, history of diatom test, drowning associated diatoms. Precaution in collection, preservation and forwarding of biological samples for diatom test, methods of isolation of diatoms from different body tissue / bone marrow and water sample i.e. drowning medium. Preparation and observation of slides.

(i) Wildlife Forensics: Wildlife, Importance of protected and endangered species of Animals and Plants. National and International scenario of wildlife, Sanctuaries and National parks. Relevant provision of wild life and environmental act. Types of wildlife crimes, different methods of poaching of wildlife animals, Illegal Trade of wildlife material, identification and examination of different kinds of wildlife crime exhibits.

UNIT-III: GENERAL PHYSIOLOGY/ PSYCHOLOGY:

1. PHYSIOLOGY

(a) Central Nervous System
(b) Peripheral Nervous System
(c) Digestive System and Circulatory System
(d) Effect of Endocrine glands:
(e) Involuntary and Voluntary Reflexes:

2. PSYCHOLOGY

(a) Biological Basis of Behaviour
(b) Perception
(c) Memory Retention
(d) Emotion Anxiety
(e) Sensation Stimulation and Response
(f) Perception: Verbal and Non-Verbal Clues

3. PSYCHOPATHOLOGY

4. PSYCHOLOGICAL TESTS

(a) Computerised Polygraph System (Lie-Detector)
(b) Brain fingerprinting
(c) Narco Analysis
(d) Psychological test for assessment

D. SCIENTIFIC OFFICER / SCIENTIFIC ASSISTANT (COMPUTERS)

UNIT – I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protectingasceneofcrime–variousstepsinvolved,contaminationissues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT – II: COMPUTERS

1. FUNDAMENTALS OF COMPUTERS

Hardware: Basic Computer Components, Monitors, Keyboard, Storage devices - Hard Disk; Storage related simple problems, CD/DVD, Mother-board, Printers its classification etc., OCR, OMR, BAR Code etc. Memory Hierarchies: Basics of Semiconductor Memories, ROM Cells & Circuits, Address Decoding, Access Time, Examples of Integrated Circuit ROMs, PROMs, EPROMs, EEPROM, Static Read/Write (RAM) Memory. CPU; ALU, Components of CPU; Register, Accumulator, IR, etc., Software System- application Software and their Examples in real life.

2. OPERATING SYSTEMS AND THEIR USAGE

Multitasking – Multiprogramming- Multiprocessing Operating System. Understanding File Systems, Exploring Microsoft File Structures, Examining NTFS Disks, Understanding Whole Disk Encryption, Understanding the Windows Registry, Understanding Microsoft Start-up Tasks, Understanding MS-DOS Start-up Tasks, and Understanding Virtual Machines. Macintosh and Linux Boot Processes and File Systems: Understanding the Macintosh File Structure and Boot Process, Examining UNIX and Linux Disk Structures and Boot Processes, Understanding Other Disk Structures.

3. TCP/IP

The Internet Protocol (IP), IP packet, IP addressing, subnet mask, classless inter domain routing (CIDR), address resolution, reverse address resolution, IP fragmentation and reassembly, ICMP, User Data gram Protocol (UDR), Transmission Control Protocol (TCP), TCP reliable stream services, TCP operation, TCP protocol, Dynamic Host Configuration Protocol (DHCP), mobile IP, IPv6, Internet routing protocols, routing information protocols, open shortest path first protocol, border gateway protocol, multicast routing, reverse path broadcasting, internet group management protocol, reverse path multicasting, distance vector multicast routing protocol. FILE SYSTEM, ACCESSING THE WORLD WIDE WEB-File systems, hypertext markup language, wireless application protocol, wireless data gram protocol, wireless transaction protocol, wsp/b over wtp, wsp/b as connectionless session service, wireless markup language, WTP class 0, WMLScript

4. NUMBER SYSTEMS AND CODES

Basic Rules of Binary , Binary Number System, Octal Number System, Hexadecimal Number System, Bits and Bytes , 1's and 2's Complements, Decimal –to- Binary Conversion, Decimal-to- Octal Conversion, Decimal –to-Hexadecimal Conversion, Binary –octal and Octal – Binary Conversions , Hexadecimal – Binary and Binary –Hexadecimal Conversion, Hexadecimal –Octal and Octal –Hexadecimal Conversion.

5. NON-LINEAR DATA STRUCTURES AND HASH TABLES

Introduction- Definition and Basic terminologies of trees and binary trees. Hash Tables: Introduction- Hash Tables- Hash Functions and its applications. HASH FUNCTIONS AND DIGITAL SIGNATURES-Authentication functions -Message authentication codes-Hash functions - Hash Algorithms (MD5, Secure Hash Algorithm)-Digital signatures (Authentication protocols, Digital signature Standard).

6. DIGITAL FORENSICS AND CYBER CRIME

Understanding Cyber Crime: Indian IT Act 2008 and amendments, categories of cybercrimes i.e., unauthorized access and hacking, virus, worms & Trojan attacks, E-mail related crimes, Internet relay, chat relating crimes, sale of illegal articles, online gambling, phishing, Intellectual property crimes, web defacement, DOS attack, cyber stalking, white collar offenses etc., Definition of Digital Forensics, Chain of custody, Forensic Procedures and handling of digital evidence, Data extraction from digital storage media, Types of Digital storage media, Preservation of data, analysis methods and methodologies, challenges including remote, cloud extractions and importance of Digital evidence-Forensic reports. Role of Artificial Intelligence in Digital Forensics.

7. MOBILE PHONE FORENSICS

Mobile phone data acquisition through logical, physical and file system techniques, forensic procedures, device data, external memory dump, evidences from memory card, Android forensics: Procedures for handling an android device, imaging android USB mass storage devices. Recovering of files, Decrypting of encrypted files, analysis of .db files and IOS forensics

8. NETWORK FORENSICS

Performing Live Acquisitions, Developing Standard Procedures for Network Forensics, Using Network Tools. E-mail Investigations: Exploring the Role of E-mail in Investigations, Exploring the Roles of the Client and Server in E-mail, Investigating E-mail Crimes and Violations, Understanding E-mail Servers. Collecting Network Based Evidence - Investigating Routers - Network Protocols - Email Tracing - Internet Fraud, SYSTEMS INVESTIGATION AND ETHICAL ISSUES-Data Analysis Techniques - Investigating Live Systems (Windows &Unix) - Investigating Hacker Tools - Ethical Issues – Cybercrime, DATABASE AND WEB SPECIFIC INPUT ISSUES-Quoting the Input – Use of stored procedures- Building SQL statements securely- XSS related attacks and remedies.

9. NEXT GENERATION INTERNET PROTOCOL & RFID

Introduction to IPv6 – IPv6 Advanced Features – V4 and V6 header comparison – V6 Address types – Stateless auto configuration – IPv6 routing protocols – IPv4-V6 Tunneling and Translation Techniques. RFID Security: Introduction, RFID Security and privacy, RFID chips Techniques and Protocols, RFID anti - counterfeiting, Man - in-the-middle attacks on RFID systems, Digital Signature Transponder, Combining Physics and Cryptography to Enhance Privacy in RFID Systems.

10. IMPLEMENTATION OF COVERT CHANNEL

Non-self-reproducing Malware- Working principle of Trojan Horse- Implementation of Remote access and file transfer- Working principle of Logical Bomb, other worms. VIRUS AND WORM ANALYSYS-Klez Virus. Clone Virus- Doom Virus- Black wolf worm- Sassar worm- Happy worm 99. Virus components- Function of replicator, concealer and dispatcher - Trigger Mechanisms- Testing virus codes-Case Study: Brute force logical bomb, DIGITAL FOOT PRINTS & SOCIAL ENGINEERING- Information gathering methodologies - Competitive Intelligence - DNS Enumerations - Social Engineering attacks. Analysis of Deep web/ dark web and silk road analysis

11. CURRENT COMPUTER FORENSICS TOOLS

Evaluating Computer Forensic Tool Needs, Computer Forensics Software Tools, Computer Forensics Hardware Tools, Validating and Testing Forensics Software. Data Acquisition: Understanding Storage Formats for Digital Evidence, Determining the best Acquisition Method, Validating Data Acquisitions, Determining What Data to Collect and Analyze, Validating Forensic Data, Addressing Data-Hiding Techniques, Performing Remote Acquisitions. Performing RAID Data Acquisitions, Using Remote Network Acquisition Tools, and Using Other Forensic Acquisition Tools. Recovering Graphics Files: Recognizing a Graphics File, Understanding Data Compression, Locating and Recovering Graphics Files, Identifying Unknown File Formats, Understanding Copyright Issues with Graphics.

12. INITIAL RESPONSE AND FORENSIC DUPLICATION

Initial Response & Volatile Data Collection from Windows system - Initial Response & Volatile Data Collection from Unix system - Forensic Duplication: Forensic duplication: Forensic Duplicates as Admissible Evidence, Forensic Duplication Tool Requirements, Creating a Forensic Duplicate/Qualified Forensic Duplicate of a Hard Drive.

13. ETHICAL HACKING TERMINOLOGY AND CRYPTOGRAPHY

Five stages of hacking - Vulnerability Research - Legal implication of hacking- Impact of hacking. System Hacking -Password cracking techniques - Key loggers - Escalating privileges - Hiding Files - Steganography technologies - Countermeasures. PUBLIC KEY CRYPTOGRAPHY: Principles of public key cryptosystems -The RSA algorithm - Key management - Diffie Hellman, Key exchange - Elliptic curve arithmetic-Elliptic curve cryptography.

14. FORENSIC AUDIO / VIDEO

Spectrography – Conversion of different voice file formats in to forensic voice module formats. Various types of spectrograms, spectrographic cues for vowels and consonants. Speech analysis in forensic sciences. Speech synthesis by analysis, Speech recognition and speaker identification. Fundamentals of Digital Signal processing and communication system. Analogue and digital systems, Analogue signal and digital signals, Analogue to digital and digital to analogue converters, need and advantages of digital systems and digital signal processing. Forensic extraction of video files from DVR and other storage media. Forensic examination of DVR containing video footages, its frame analysis. Forensic examination and authentication of meta data present in video/audio files. Enhancement of video/ Photo and its comparison/ authentication.

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ANNEXURE II

SYLLABUS FOR THE POSTS OF LABORATORY TECHNICIANS

LABORATORY TECHNICIAN (PHYSICAL / GENERAL)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime – various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: PHYSICS

1. MECHANICS OF PARTICLES

Laws of motion, motion of variable mass system, Equation of motion of a rocket. Conservation of energy and momentum, Collisions in two and three dimensions, Concept of impact parameter, scattering cross-section, Rutherford scattering.

2. CENTRAL FORCES

Definition with examples, conservative nature of central forces, conservative force as a negative gradient of potential energy, equation of motion under a central force. Derivation of Kepler's laws.

3. GENERAL WAVES & OSCILLATIONS

(a) Simple Harmonic oscillations

Simple harmonic oscillator and solution of the differential equation-Physical characteristics of SHM, torsion pendulum-measurements of rigidity modulus, compound pendulum-measurement of 'g', Principle of superposition, combination of two mutually perpendicular simple harmonic vibrations of same frequency and different frequencies and Lissajous figures.

(b) Vibrating strings

Transverse wave propagation along a stretched string, general solution of wave equation and its significance, modes of vibration of stretched string clamped at ends, overtones and harmonics. Energy transport and transverse impedance.

4. GENERAL RAY OPTICS AND WAVE OPTICS

(a) Aberrations

Introduction of monochromatic aberrations, spherical aberration, methods of minimizing spherical aberration, coma, astigmatism and curvature of field, distortion. Chromatic aberration-the achromatic doublet. Achromatism for two lenses (i) in contact and (ii)separated by a distance.

(b) Interference

Principle of super position coherence-temporal coherence and spatial coherence-conditions for interference of light. Fresnel's biprism-determination of wavelength of light-change of phase on reflection. Oblique incidence of a plane wave on a thin film due tore flected and transmitted lights (cosine law) -colors of thin films- Interference by a film with two non-parallel reflecting surfaces (Wedge shaped film). Determination of diameter of wire, Newton's rings in reflected light. Michelson interferometer, Determination of wavelength of monochromatic light using Newton's rings and Michelson Interferometer.

(c) Diffraction

Introduction, Distinction between Fresnel and Fraunhofer diffraction, Fraunhofer diffraction -Diffraction due to single slit Fraunhofer diffraction due to double slit-Fraunhofer diffraction pattern with N slits (diffraction grating). Resolving power of grating, Determination of wavelength of light in normal incidence position using diffraction grating, Fresnel's half period zones - area of the half period zones - zone plate-comparison of zone plate with convex lens, differences between interference and diffraction.

(d) Polarization

Polarized light: methods of polarization, polarization by reflection, refraction, double refraction, scattering of light-Brewster's law-Mauls law-Nicol prism polarizer and analyzer-Quarter wave plate, Half wave plate-optical activity, determination of specific rotation by Laurent's half shade polarimeter-Babinet's compensator - Linear, elliptical and circular polarization.

(e) Fiber Optics

Introduction- different types of fibers, rays and modes in an optical fiber, fiber material, principles of fiber communication (qualitative treatment only), advantages of fiber optic communication.

5. THERMODYNAMICS

(a) Thermodynamics

Introduction- law of thermodynamics, Kelvin's and Clausius statements-Entropy, physical significance -Change in entropy in reversible and irreversible processes-Entropy and disorder-Entropy of Universe-Temperature-Entropy (T-S) diagram- Change of entropy of a perfect gas- change of entropy when ice changes into steam.

6. ELECTROMAGNETISM

(b) Electric and magnetic fields

Biot-Savart's law, explanation and calculation of B due to long straight wire, a circular current loop and solenoid - Lorentz force.
Electromagnetic Induction and Electromagnetic waves
Faraday's law - Lenz's law- Self and mutual inductance, displacement current - Maxwell's equations - Maxwell's plane wave equation, Transverse nature of electromagnetic waves.

7. MODERN PHYSICS

(a) Atomic Physics

Drawbacks/limitations of Bohr's atomic model- Somerfield's Modification of Bohr's Theory, Somerfield's elliptical orbits-relativistic correction.

Wave particle duality and concept of Matter waves, de Broglie's hypothesis – wavelength of matter waves, Davisson and Germer experiment. Heisenberg's uncertainty principle -Complementarity principle of Bohr, X-rays and Lasers Theory.

(b) Nuclear Physics

Basic ideas of nucleus size, mass, binding energy. Liquid drop model and Shell model(qualitative aspects only) – Magic numbers. Radioactive decay, Alpha decay, B-decay, Energy kinematics for B-decay, neutrino hypothesis.

(c) Solid state Physics

Basic information of crystalline structure, etc.,

(d) Electronics

Semi-conductors, PN junction, diode, transistors etc.,

Practical Information of all Instruments.

UNIT-III: BALLISTICS

1. HISTORY AND BACKGROUND OF FIREARMS

Characteristics and classification of Firearms based on various parameters – Identification of origin – Improvised/Country made/ Imitative Firearms and their constructional features.

2. PRINCIPLES AND PRACTICE OF IDENTIFICATION OF FIREARMS

Different types of marks produced during firing process on cartridge and on Bullet – Class and Individual characteristics.

3. AMMUNITION & ITS CONSTRUCTIONAL PARTS

Classification of ammunition on the basis of constructional features – Safety aspects for handling firearms and ammunition – Types of Ammunition.

4. GUNSHOT RESIDUE

Composition of GSR depending upon propellant & primer mixtures, GSR distribution – Chemical, Instrumental methods of GSR analysis.

5. INTERNAL AND EXTERNAL BALLISTICS

Introduction - Various types of bullets and compositional aspects – Direction of fire – Range of Fire – Projectile velocity determination – Theory of recoil – Trajectory determination – Terminal Ballistics – Effect of projectile on hitting the target – Wound Ballistics.

B. LABORATORY TECHNICIAN (CHEMICAL)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime–various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: INORGANIC CHEMISTRY

1. ATOMIC STRUCTURE-II

Dual properties of electrons - de-Broglie relation – Heisenberg's uncertainty principle – Wave nature of an electron – Schrodinger wave equation (only equation, no derivation) – Eigen values and Eigen function – significance only – molecular orbital method. Application to Homo diatomic and Hetero diatomic molecules – Metallic Bond – Hybridization of atomic orbital's Hybridization involving s, p and d Orbital's – Types of forces between molecules.

2. PERIODIC CLASSIFICATION-II

Review of periodic properties – Calculation of atomic radii – Calculation of ionic radii – Method of determination of Ionisation potential – Factors affecting ionisation potential – Method to determine the electron affinity – Factors affecting EA – Various scales on electro negativity values.

3. p- BLOCK ELEMENTS – II

Group-13 General trends – Potash alum – Preparation, Properties and uses – Group-14 General trends – Silicates – Types and structure – Silicones – Structure and uses – Extraction of lead – Group-15 General trends – Phosphorous – Allotropes and extraction – Compounds of phosphorous – Group-16 General trends – H_2SO_4 – Manufacture and properties – Group-17 General characteristics. Physical and Chemical properties – Isolation of fluorine and its properties – Interhalogen compounds Group 18 Inert gases – Isolation, properties and uses.

4. d- BLOCK ELEMENTS

General characteristics of d-block elements – First transition series – Occurrence and principles of extraction – chromium, copper and zinc – Alloys – Second transition series – Occurrence and principles of extraction of silver – Third transition series – Compounds – $K_2Cr_2O_7$, $CuSO_4.5H_2O$, $AgNO_3$, Hg_2Cl_2, $ZnCO_3$, Purple of cassius.

5. f- BLOCK ELEMENTS

General characteristics of f-block elements and extraction – Comparison of Lanthanides and Actinides – Uses of lanthanides and actinides.

6. COORDINATION COMPOUNDS AND BIO-COORDINATION COMPOUNDS

An introduction – Terminology in coordination chemistry – IUPAC nomenclature of mononuclear coordination compounds – Isomerism in coordination compounds – Structural isomerism – Geometrical isomerism in 4-coordinate, 6-coordinate complexes – Theories on coordination compounds – Werner's theory (brief) – Valence Bond theory – Crystal field theory – Uses of coordination compounds – Bio-coordination compounds. Haemoglobin and chlorophyll.

7. NUCLEAR CHEMISTRY

Nuclear energy, nuclear fission and fusion – Radio carbon dating – Nuclear reaction in sun – Uses of radioactive isotopes.

UNIT – III: PHYSICAL CHEMISTRY

1. SOLID STATE

Types of packing in crystals – X-Ray crystal structure – Types of ionic crystals – Imperfections in solids – Properties of crystalline solids – Amorphous solid.

2. THERMODYNAMICS

Review of first law – Need for the second law of thermodynamics – Spontaneous and non spontaneous processes – Entropy – Gibb's free energy – Free energy change and chemical equilibrium – Third law of thermodynamics.

3. CHEMICAL EQUILIBRIUM

Applications of law of mass action – Le Chatlier's principle.

4. CHEMICAL KINETICS

First order reaction and pseudo first order reaction – Experimental determination of first order reaction – method of determining order of reaction – temperature dependence of rate constant – Simple and complex reactions.

5. SURFACE CHEMISTRY

Adsorption – Catalysis – Theory of catalysis – Colloids – Preparation of colloids – Properties of colloids – Emulsions.

6. ELECTROCHEMISTRY

Conductors, insulators and semi conductors – Theory of electrical conductance – Theory of strong electrolytes – Faraday's laws of electrolysis – Specific resistance, specific conductance, equivalent and molar conductance – Variation of conductance with dilution – Kohlraush's law – Ionic product of water, pH and pOH – Buffer solutions – Use of pH values. Cells – Electrodes and electrode potentials – Construction of cell and EMF – Corrosion and its preventions – commercial production of chemicals – Fuel cells.

UNIT – IV: ORGANIC CHEMISTRY

1. ISOMERISM

Geometrical isomerism – Conformations of cyclic compounds – Optical isomerism – Optical activity – Chirality – Compounds containing chiral centres – D-L and R-S notation – Isomerism in benzene.

2. HYDROXY DERIVATIVES

Nomenclature of alcohols – Classification of alcohols – General methods of preparation of primary alcohols – Properties Methods of distinction between three classes of alcohols 1o ,2o and 3o – Methods of preparation of dihydric alcohols(glycol) – Properties – Uses – Methods of preparation of trihydric alcohols – Properties – Uses – Aromatic alcohols - Methods of preparation of benzyl alcohol – Properties – Uses – Phenols – Manufacture of phenols – Properties – Chemical properties – Uses of Phenols.

3. ETHERS

Ethers – General methods of preparation of aliphatic ethers – Properties – Uses – Aromatic ethers – Preparation of anisole – Reactions of anisole – Uses.

4. CARBONYL COMPOUNDS

Nomenclature of carbonyl compounds – Comparison of aldehydes and ketones – General methods of preparation of aldehydes – Properties – Uses – Aromatic aldehydes – Preparation of benzaldehyde – Properties – Uses – Ketones – General Methods of preparation of aliphatic ketones (acetone) – Properties – Uses – Aromatic ketones – Preparation of acetophenone – Properties – Uses – Preparation of benzophenone – Properties.

5. CARBOXYLIC ACIDS

Nomenclature – Preparation of aliphatic monocarboxylic acids –formic acid – Properties – Uses – Tests for carboxylic acid – Monohydroxy mono carboxylic acids – Lactic acid – Sources – Synthesis of lactic acid – Aliphatic dicarboxylic acids – Preparation of dicarboxylic acids – oxalic and succinic acids – Properties – Strengths of carboxylic acids – Aromatic acids – Preparation of benzoic acid – Properties – Uses – Preparation of salicylic acid – Properties – Uses – Derivatives of carboxylic acids – Preparation of acid chloride – acetyl chloride (CH3COCI) – Preparation – Properties – Uses – Preparation of acetamide – Properties – Preparation of acetic anhydride – Properties – Preparation of esters – methyl acetate – Properties.

6. ORGANIC NITROGEN COMPOUNDS

Aliphatic nitro compounds – Preparation of aliphatic nitroalkanes – Properties – Uses – Aromatic nitro compounds – Preparation – Properties – Uses – Distinction between aliphatic and aromatic nitro compounds – Amines – Aliphatic amines – General methods of preparation – Properties – Distinction between 1o ,2o and 3o amines – Aromatic amines – Synthesis of benzylamine – Properties – Aniline – Preparation – Properties – Uses – Distinction between aliphatic and aromatic amines – Aliphatic nitriles – Preparation – Properties – Uses – Diazonium salts – Preparation of benzene diazonium chloride – Properties.

7. BIOMOLECULES

Carbohydrates – Structural elucidation – Disaccharides and polysaccharides – Proteins – Amino acids – Structure of Proteins – Nucleic acids – Lipids.

8. CHEMISTRY IN ACTION

Medicinal Chemistry – Drug abuse – Dyes – Classification and uses – Cosmetics – creams perfumes, talcum powder and deodorants – Chemicals in food – Preservatives artificial sweetening agents, antioxidants and edible colours – Insect repellent – Pheromones and sex attractants – Rocket fuels – Types of polymers, preparation and uses.

C. LABORATORY TECHNICIAN (BIOLOGY / SEROLOGY)

UNIT-I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography, sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime – various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT-II: LIFE SCIENCES

1. Biological Classification
Biological Classification Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

2. Life Cell theory
The Unit of Life Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, nucleus. Cell Cycle and Cell Division Cell cycle, mitosis, meiosis and their significance

3. Plant Kingdom
Plant Kinddom Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae

4. Animal Kingdom
Animal Kingdom Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level.

5. Biotechnology
Biotechnology Principles and Processes Genetic Engineering (Recombinant DNA Technology). Biotechnology and its applications in health and agriculture. Human insulin and vaccine production, stem cell technology, gene therapy.

6. Biomolecules
Chemical constituents of living cells. Biomolecules, structure and function of proteins, carbohydrates, lipids, and nucleic acids; Enzyme - types, properties, enzyme action.

7. Body Fluids

Body Fluids and Circulation Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels.

8. Evolution
Evolution & Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.

9. Ecosystem
Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy.

10. Biodiversity
Biodiversity and its Conservation Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

11. Acids, bases and salts
Definitions in terms of furnishing of H+ and OH– ions, General properties, examples and uses, neutralization, concept of pH scale and importance of pH in everyday life.

12. General Human Psychology

D. LABORATORY TECHNICIAN (COMPUTER)

UNIT – I: GENERAL FORENSIC SCIENCE

1. FORENSIC SCIENCE

(a) Historical aspects of forensic science.
(b) Definitions, scope and concepts in forensic science.
(c) Principles and basics of forensic science.
(d) Growth of Forensic Science Laboratories in India – Central and State level laboratories.
(e) Services and functionalities provided by various Forensic Science Laboratories
(f) Branches of forensic science.
(g) Forensic science in India: Organizational set up of forensic science laboratories.
(h) Tools and techniques in forensic science.

2. CRIME SCENE MANAGEMENT

(a) Types of crime scenes –indoor and outdoor. Securing and isolating the crime scene.
(b) Crime scene search methods. Safety measures at crime scenes. Legal considerations at crime scenes.
(c) Documentation of crime scenes – photography, videography , sketching and recording notes.
(d) Role and duties of Forensic Scientists.

3. CRIME SCENE EVIDENCE

(a) Classification of crime scene evidence – physical and trace evidence.
(b) Locard Exchange principle
(c) Physical evidence, types and importance in a criminal investigation
(d) Protecting a scene of crime – various steps involved, contamination issues.
(e) Preservation, Packaging & transportation of Physical Evidences
(f) Documentation
(g) Chain of Custody
(h) Reconstruction of crime scene.

UNIT – II: COMPUTERS

1. FUNDAMENTALS OF COMPUTERS

Hardware: Basic Computer Components, Monitors, Keyboard, Storage devices - Hard Disk; Storage related simple problems, CD/DVD, Mother-board, Printers its classification etc., OCR, OMR, BAR Code etc. Memory Hierarchies: Basics of Semiconductor Memories, ROM Cells & Circuits, Address Decoding, Access Time, Examples of Integrated Circuit ROMs, PROMs, EPROMs, EEPROM, Static Read/Write (RAM) Memory. CPU; ALU, Components of CPU; Register, Accumulator, IR, etc., Software System- application Software and their Examples in real life.

2. OPERATING SYSTEMS AND THEIR USAGE

Multitasking – Multiprogramming- Multiprocessing Operating System. Understanding File Systems, Exploring Microsoft File Structures, Examining NTFS Disks, Understanding Whole Disk Encryption, Understanding the Windows Registry, Understanding Microsoft Start-up Tasks, Understanding MS-DOS Start-up Tasks, and Understanding Virtual Machines. Macintosh and Linux Boot Processes and File Systems: Understanding the Macintosh File Structure and Boot Process, Examining UNIX and Linux Disk Structures and Boot Processes, Understanding Other Disk Structures.

3. FUNDAMENTALS OF DATA SCIENCE AND INTERNET

Number systems, Data representation, Digital electronic circuits, Data structures, Fundamentals of computer architecture proc essor design, Internet and e-mails: Web browsing searching & downloading & uploading, managing an email, e-banking etc.

4. BASICS OF NETWORKING

Networking devices, Topologies, Types of Networks and protocols, concept of database, Data types, Network and information security threats, Antivirus and preventive measures.

5. MOBILE PHONE DEVICES

Mobile phone devices, Types of Evidence present in mobile phones, SIM cards. Preservation of mobile phones. Wireless Technologies- International Mobile Equipment Identity (IMEI), Bluetooth and Mobile Payment Gateways. Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and Global System for Mobile Communications (GSM) including features and relative strengths.

6. CYBER CRIMES

A Brief History of the Internet, Recognizing and Defining Computer Crime, types of Cyber Crimes, Contemporary Crimes, Computers as Targets, Contaminants and Destruction of Data, Indian IT ACT - 2000, Indian IT Act 2008 and amendments.

UNIT – III: FORENSIC AUDIO / VIDEO

Fundamentals of Digital Signal processing and communication system. Analogue and digital systems, Analogue signal and digital signals, Analogue to digital and digital to analogue converters, need and advantages of digital systems and digital signal processing.

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ANNEXURE III

SYLLABUS FOR THE POSS OF LABORATORY ATTENDANT

UNIT-I: ANIMAL AND PLANT KINGDOM

1. Life processes: 'Living Being'. Basic concept of nutrition, respiration, transport and excretion in plants and animals.
2. Control and co-ordination in animals and plants: Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.
3. Cell - Basic Unit of life : Cell as a basic unit of life; prokaryotic and eukaryotic cells, multi cellular organisms; cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes - basic structure, number.

   Tissues, Organs, Organ System, Organism: Structure and functions of animal and plant tissues (only four types of tissues in animals; Meristematic and Permanent tissues in plants)
4. Reproduction: Reproduction in animals and plants (asexual and sexual) reproductive health - need and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health.

UNIT-II: HEREDITY AND EVOLUTION

Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination

UNIT-III: ENVIRONMENTAL SCIENCE

Natural Resources our environment: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances

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ANNEXURE – IV (A)

SCHOOL STUDY CERTIFICATE

Name of the Student:

Father's Name:

Class	Name and Place of School	District	Duration of Study with Month & Year
I			
II			
III			
IV			
V			
VI			
VII			

Note**:** Should be obtained from the Educational Institution(s)

Name of the School:

Village / Town:

Mandal:

District:

Office Seal:

Station:
Date:

Signature of the Head of
the Educational Institute

ANNEXURE – IV (B)

CERTIFICATE OF RESIDENCE

(To be produced by such Candidates who have not studied in any Government Educational Institution / Government Recognized Educational Institution during the whole or part of the relevant 4/7 years period but claim to be local Candidates by virtue of residence for which there is reservation for local Candidates)*

It is hereby certified that

(a) Sri / Smt / Kum _____son / daughter / wife of _____has **not studied in any Government Educational Institution / Government Recognized Educational Institution** during the whole or part* of the 4/7 consecutive academic years ending with the academic year in which he/she completed his/her7thclass

b) In the 4/7 years immediately preceding his/ her study of 7th Class, he/she resided in the following place/places namely –

Sl. No.	Village	Mandal	District	Period
1				
2				
3				
4				
5				
6				
7				

Office Seal:

Station: Officer of Revenue Department not below the rank
Date: of MRO holding independent Charge of a Mandal

**Strike off whole/part as the case may be*

ANNEXURE – V

MEDICAL CERTIFICATE IN RESPECT OF ORTHOPAEDICALLY HANDICAPPED CANDIDATE

(GO Ms No. 109 dated 15-06-1992 of Women's Development, Child Welfare and Labour Department)

[For all the purpose of assistance, the Orthopedically Handicapped are those who have physical defect or deformity which cause an interference with the normal functioning of bones, muscles and joints.]

Certified that the Medical Board have this ……Day of ……20……have examined the applicant whose particulars are given below and that he/she falls within the above definition.

1. Name of the Candidate:
2. Father's Name:
3. Sex:
4. Approximate Age:
5. Identification Marks:

Passport size Photograph of the Candidate with the attestation of the Issuing Authority

6. (a) Name of Disability: (Tick the relevant from following list) Post-Polio Paralysis, Hemiplegia, Quadra-Regia Malunited fracture, Nerve paralysis, Upper extremity, Lower Extremity Limp Painful shortening, Deformity Congenital Acquired above knee, below knee, Hip Hemipelvectomy, Symes Chopart, Wrist Fingers, Below elbow, Above elbow, Shoulders, Fore quarter, Unilateral Bilateral.	
6. (b) Extent of Disability: (Specific Percentage has to be mentioned) Estimate in percentage (Me-Bride-scale) on Anatomical functional, (Patient's Assessment, Examiner's Assessment) Economical Basis mention a percentage	
6. (c) Use of Appliance: (Tick relevant from following list) Caliper, Crutch, above knee, Below-knee, Prosthesis, Cans, Unilateral, Bilateral Shoulder Dis-Articulation	
6. (d) Any Operation Done or Indicated:	
6. (e) Photograph (Attested) to show the nature of disability and any appliance if used	
7. Any other particulars to clarify the nature and extent of disability that the Surgeon might like to point out	

Signature of the Applicant:

Signature of Orthopedic Surgeon
Medical Board (with Seal)

Signature of Medical Superintendent
Medical Board (with Seal)