

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

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Groundcrew Examining Board (GEB)
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List of documents submitted in support of the Qualifications File

1. Curriculum and training contents for Joint Basic Physical Training (JBPT)
2. Curriculum and training contents for Trade Phase Training Term – I
3. Curriculum and training contents for Trade Phase Training Term – II
4. Curriculum and training contents for Trade Phase Training Term – III
5. Curriculum and training contents for Trade Phase Training Term – IV
6. Air Force Order (AFO) 57/15 specifying the role of Environmental Support Services Assistant (ESSA)
7. Blue Print of REB (T)

SUMMARY

1. Qualification Title	AC/LAC: Environment Support Services Assistant
2. Qualification Code	IAF/ESSA/100
3. NCO Code and Occupation	5411.0100, Fire Fighter; 5414.0151, Armed Security Guard
4. Nature and purpose of the qualification	A Trade Certification for the personnel with adequate knowledge and skill to perform the duties in the Station/ Unit Administration / Fire Section / Photo Section / Station Workshop (Machine Bay) sections of Air Force Units/Station.
5. Body/bodies which will award the qualification	Workshop Training Institute (WTI) & Regional Examining Board (Training)
6. Body which will accredit providers to offer courses leading to the qualification	Directorate of Training (D Trg), Air HQ
7. Whether accreditation/affiliation norms are already in place or not (if yes, attach a copy)	N/A as specific to Defence Forces
8. Occupation(s) to which the qualification gives access	Aircraftman/Leading Aircraftman(AC/LAC) of ESSA
9. Job Description of the Occupation	To maintain the safety of environment of the Air Force Station and to meet any fire contingency arising in and around the Air Force Station. For details refer Annexure-VI.
10. Licensing requirements	N/A
11. Statutory and regulatory requirements of the relevant sector (documentary evidence to be provided)	Air Force Act, Air Force Regulations, Air Force Orders

12. Level of the qualification in the NSQF	Level 4																																						
13. Anticipated volume of training/learning required to complete the qualification	<p>3030 Hrs comprising of following terms:</p> <table border="1" data-bbox="528 405 1315 752"> <thead> <tr> <th rowspan="2">Sl No.</th> <th rowspan="2">Trade Phase Term</th> <th colspan="2">Periods</th> <th rowspan="2">Total Periods</th> <th rowspan="2">Total Hours</th> </tr> <tr> <th>Theory</th> <th>Practical</th> </tr> </thead> <tbody> <tr> <td>(i)</td> <td>JBPT</td> <td>535</td> <td>865</td> <td>1400</td> <td>1050</td> </tr> <tr> <td>(ii)</td> <td>I</td> <td>385</td> <td>495</td> <td>880</td> <td>660</td> </tr> <tr> <td>(iii)</td> <td>II</td> <td>349</td> <td>531</td> <td>880</td> <td>660</td> </tr> <tr> <td>(iv)</td> <td>III</td> <td>364</td> <td>516</td> <td>880</td> <td>660</td> </tr> <tr> <td colspan="2">TOTAL</td> <td>1633</td> <td>2407</td> <td>4040</td> <td>3030</td> </tr> </tbody> </table>	Sl No.	Trade Phase Term	Periods		Total Periods	Total Hours	Theory	Practical	(i)	JBPT	535	865	1400	1050	(ii)	I	385	495	880	660	(iii)	II	349	531	880	660	(iv)	III	364	516	880	660	TOTAL		1633	2407	4040	3030
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14. Indicative list of training tools required to deliver this qualification	Classroom with modern AV aids, Environmental Management System, Aspect and Impact analysis, Identification of mandatory and non mandatory cause of pollution, Modern environmental management tools, Domestic Fire Tender and FTP, Digital Camera, Online error management system software, computing appliances. Fire Arms, Firing Range, Ground Training Infrastructure.																																						
15. Entry requirements and/or recommendations	<p>Education Qualification: Passed Intermediate / 10+2 / equivalent examination with subjects approved by Central / State Education Boards with minimum 50% marks in aggregate. OR Passed two year vocational course affiliated / recognized by CBSE / State Education Boards/ Councils duly recognized at par with 10+2 by AIU with minimum 50% marks in aggregate, and 50% marks in English in Vocational Course or in Intermediate / Matriculation if English is not a subject in Vocational Course.</p> <p>Age : 17 Yrs -21 Yrs</p> <p>Prerequisite for Trade Phase Training: Personnel should have successfully completed Joint Basic Phase Training</p>																																						
16. Progression from the qualification	<p>Job Progression AC→LAC→Cpl*→Sgt*→JWO*→WO→MWO *Subject to clearing promotion exam for Corporal (Cpl), Sergeant (Sgt) and Junior Warrant Officer (JWO) called as Corporal Promotion Exam (CPE), Sergeant Promotion Exam (SPE) and JWO Promotion Exam (JPE).</p>																																						
17. Planned	N/A, as each stage is complete.																																						

arrangements for the Recognition of Prior learning (RPL)			
18. International comparability where known	Not Known		
19. Date of planned review of the qualification.	Every 5 yrs/earlier in case of change in training syllabus pattern.		
20. Formal structure of the qualification			
Title of component and identification code.	Mandatory/ Optional	Estimated size (learning hours)	Level
1. Capability to perform the role of ESSA as Machinist IAF/ESSA/100/01	M	1010	4
2. Capability to perform the role of ESSA as Machinist IAF/ESSA/100/02	M	1010	4
3. Capability to perform the role of ESSA as Photo Technician IAF/ESSA/100/03	M	1010	4
Total		3030	

Syllabus of all the TPT and assessment strategy Annexed as Annexures.

SECTION 1 **ASSESSMENT**

21. Body/Bodies which will carry out assessment:-

There are two bodies, which carry out the assessment:

1. Unit Examining Board (UEB) of WTI is responsible for conducting in term exams.
2. Regional Exam Board (Training) [REB (T)] is responsible for conducting the End Term Exam for gauging the knowledge acquired by the Personnel Trade Phase Training (TPT) is completed through 3/4 terms for Non Tech/Tech trade airmen respectively. The formative and Summative Assessment during the Trade Phase is conducted respectively by Training Institute and external body REB(T). The final certification and mustering into the trained trade is done by REB (T).

22. How will RPL assessment be managed and who will carry it out?

N/A.

23. Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

Assessment is carried out by both UEB and independent REB (T). Both the boards have all necessary infrastructure and pool of qualified Instructors, Examiners and Assessors to carry out detailed assessments. REB (T) uses all the modern trends like Online Testing and Evaluation System (OTES) for conducting the exams, evaluation and indepth analysis of the result. The exams are conducted in the following manner:-

- (a) Written Exams are conducted by both boards for the theory part of curriculum consisting of questions divided into three categories (Factual, Comprehension, Application) for testing the knowledge of personnel in his trade:-
 - (i) Objective: Multiple Choice Question, True & False, Fill in the blanks
 - (ii) Subjective: Very Short Answer, Short Answer, Long Answer
- (b) Practical Exam to test the :
 - (i) Professional Skill
 - (ii) Core Skill of the Personnel
- (c) Viva-Voce to gauge the overall knowledge, and its application in resolving an issue.

Blue Print for conduct of Exam is attached as Annexure.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.

24. Assessment Evidences

Title of Component:-

Outcomes to be assessed	Assessment criteria for the outcome
1. Capability to undertake the entire range of work of Admin Office (SWO's/UWO's).	1. (a) Discipline and reporting on matter of office equipment and individuals. (b) Maintenance of the leave register, duty roster, compiling parade state and strength. 2. Station Sanitation, hygiene camp and personnel. 3. Knowledge about Fire Section for following. (a) Types of fire. (b) Fire appliance operation and assists in their maintenance. (c) Fire tenders, their operation and maintenance. 4. Operating unit post office

	<p>5. Operating fatigue parties.</p> <p>6. Custody of kit of personnel in case of death/disaster/AWOL cases.</p> <p>7. Organising ground defence and PAD parties.</p> <p>8. Operating fatigue parties.</p>
2. Capability to perform the role of ESSA as Machinist	<p>Able to carry out the following:-</p> <p>(a) Daily servicing of lathes in use.</p> <p>(b) Production as per workshop drawings.</p> <p>(c) To carry out turning tasks, in ferrous and non ferrous metals and their alloys, such as:-</p> <p>(i) Parallel and taper turning.</p> <p>(ii) Facing knurling and boring.</p> <p>(iii) Internal and external “Y” form thread cutting.</p> <p>(d) Tapping and reaming.</p>
3. Capability to perform the role of ESSA as Photo Technician	<p>1. Photograph of exterior and interior with ground cameras.</p> <p>2. Undertake processing of air and cine films by time and temperature method in static and mobile photo section; intensification and reduction.</p> <p>(a) Operate air, Cine & Recorder Cameras: Epidiascopes and projectors.</p> <p>(b) Use ground cameras for specialized work</p> <p>3. Produce photographs using the technique of subject brightness range of objective.</p> <p>4. Digital still photography & Digital video recording.</p> <p>5. Image editing and movie creation.</p> <p>6. Produce photographs using precision ground cameras and enlargers.</p> <p>7. Assist in carrying out the administration of photo section.</p>
<p>Means of assessment 1</p> <p>There are two types of Assessments viz. Formative and Summative.</p> <p>(a) The Formative Assessment is carried out continuously during the conduct of course Exam & is conducted by UEB.</p> <p>(b) The Summative Assessment is carried out at the end of the course. Exam is conducted by REB (T)</p> <p>Details are mentioned under means of Assessment-2. Written test, Practical examination/Skill test & Viva-Voce.</p>	
<p>Means of assessment 2</p> <p>1. Means of Formative Assessment (Total marks allotted- 200) conducted by UEB</p> <p>(a) General Factor (GST, GSK, Sports, English) : 40 Marks</p> <p>(b) Trade Factor (Mid Term Test & Term End Test) : 160 Marks</p> <p>2. Means of Summative Assessment (Total marks allotted-1000) conducted by REB(T).</p>	

(a) Written test for Theory component	400 Marks
(b) Practical	400 Marks
(c) Viva-Voce	200 Marks
Component wise distribution of marks is given in the Annexure-II.	
Pass/Fail	
The minimum qualifying standard is 50% marks in each part and 50% in aggregate of all parts of Mid Course Knowledge Test (MCKT) and Course End Knowledge Test (CEKT) Exam conducted by REB (T). Those who score 50% in each part, 60% in each term and 70% in aggregate are directly conferred the rank of LAC.	
Exam to be cleared within two attempts.	

SECTION 2

25. EVIDENCE OF LEVEL

OPTION A

Title/Name of qualification/component: Aircraftsman (AC)/ Leading Aircraftsman (LAC) of ESSA in Indian Air Force			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
Process	Personnel carry out routine works of ESSA trade comprising of the Admin Section, Machinist and ground photography.	Personnel are able to identify the issues pertaining to ESSA trade and take corrective actions to resolve the issues pertaining to their job.	4
Professional knowledge	Personnel are equipped with fair knowledge of General Administration, Photo Technician & Machine Shop technology. Have working knowledge of various equipments pertaining to ESSA Trade.	Personnel able to acquire the working knowledge of General Administration, Photo Technician & Machine Shop technology Know about the types and roles of equipment held in the Station Warrant Officer's office, Photo Section and Machine shop bay and aware of Aerospace, Maintenance and ground safety aspects.	4
Professional skill	Able to grasp the problem, understand the consequences and take appropriate action to defuse it. The personnel will be able to perform discipline matter of office equipment and individuals, Maintenance of	Ability to identify the cause of problem and understand the consequences it can likely lead to. Initiate corrective measures after consultation	4

Title/Name of qualification/component: Aircraftsman (AC)/ Leading Aircraftsman (LAC) of ESSA in Indian Air Force			
NSQF Domain	Outcomes of the Qualification/Component	How the outcomes relates to the NSQF level descriptors	NSQF Level
	<p>the records, duty roster, compiling parade state and strength, Escorting duties, Hygiene of camp and personnel, Station Sanitation, fire administration, Fire appliance operation and assists in their maintenance, Fire tenders & their operation and maintenance.</p> <p>Take photograph of exterior and interior with ground cameras, Loading film in the magazines of all air cine and recorder cameras, Producing photographs, Use of ground cameras for specialized Work, Digital still photography, Digital video recording, Image editing and movie creation.</p> <p>Daily servicing of lathes in use, Grinding lathe tools in common use, Production as per workshop drawings, to carry out simple turning tasks.</p>	with the seniors.	
Core skill	<p>Able to communicate well with all personnel of the Unit/Station.</p> <p>Able to read the instructions, policies and orders in Hindi, English and local language. Handle computer and office desk jobs.</p>	Should have good communication skills, have a fair good computer knowledge , can handle personal banking, has good understanding of social and natural environment.	4
Responsibility	Able to carry out the day to day activities related to his trade with ease.	Able to undertake assigned tasks and will be responsible for them.	4

SECTION 3

EVIDENCE OF NEED

26. What evidence is there that the qualification is needed?

In IAF many types of Administrative requirements which include hygiene & sanitation, vermiculture management, Horticulture, Bird hazard management and

Ground defence management at the time hostilities are to be performed. Also the technical tasks involving operation & maintenance of fire appliances including Fire tenders, Photography for recording all events and Daily servicing of lathes, Grinding, lathe tools in common use, Production as per workshop drawing are need to be performed. These personnel should be able to carry out day to day operation and maintenance of above mentioned, also they should be able to undertake minor defect either at their own or under the guidance of a supervisor so that serviceability of all the equipment is always maintained at optimum level. These tradesmen should be capable in identifying the fault in the equipment and taking necessary action for its rectification.

Thus, after the JBPT, the TPT course gives the recruits in depth knowledge to handle various situations, which are likely to be encountered during the course of actual field deployment both during war/peace.

What is the estimated uptake of this qualification and what is the basis of this estimate?

Based on the cadre and actual figures cannot be revealed.

27. Recommendation from concerned Line Ministry of Govt/Regulatory Body. To be supported by documentary Evidences.

This qualification is especially tailor made to suit the specific Air Force requirements for Environmental Management System. However, there are some similarities with civil in fire fighting office of government.

28. What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

This qualification is especially tailor made to suit the specific AF requirements.

29. What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

IAF has a well defined Directorates responsible for monitoring both the training and testing aspects. **Directorate of Training** is responsible for ensuring that right training is imparted to the recruits. The syllabus is based on various studies and feedback received from field units/ REB(T).

Directorate of Education is responsible for Trade Testing and evaluation of the knowledge and skill level of the personnel passing out from the training institute and their performance in field units.

This qualification will be reviewed and revised at an interval of five years or earlier, in

case of change in syllabus based on the feedback from field Units/REB(T/Z).

SECTION 4

EVIDENCE OF PROGRESSION

30. What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

On completion of the course, an Aircraftsman will be posted the field unit, where he will undergo OJT. On successful completion of the Station Guard Room and Provost Desk training, as per his suitability he will be recommended for one of the sections. Accordingly, the air warrior will be imparted with another five months of skill training under supervision and will be promoted to LAC. After three months of skill refinement he will be in a position to appear for CPE. On successful completion of CPE he will be promoted to Cpl after five years from date of enrolment. He will further keep climbing the promotion ladder by appearing for SPE for Sgt and JPE for JWO ranks. As per new policy in vogue, ACRs have been linked to skill levels. So, he will be motivated to enhance his skill levels and get them tested by appearing for SGT.

The progression flow is given below.

AC→LAC→Cpl*→Sgt*→JWO*→WO→MWO

*Subject to clearing promotion exam for Cpl, Sgt and JWO called as CPE, SPE and JPE.

INSTRUCTOR PREREQUISITES: For posting as an instructor following prerequisites are to be fulfilled:-

(a) **Personal attributes:-**

- (i) Should be energetic, motivating, innovative and good at communication.
- (ii) Should be able to establish rapport with the trainees and employ innovative methods to impart instructions.

(b) **Qualification:-**

- (i) Should have attained rank of Sgt and above (at least 13 yrs of service).
- (ii) Should have been assessed 'Superior' and above during preceding 5 yrs.

(c) **QRs:-**

- (i) Should have in depth knowledge and be highly skilled in his trade.

- (ii) Should be recommended for instructional duties by GEB/REB on attaining stipulated standards during assessment.
- (iii) Should have undergone Methods of Instruction Course conducted by Ground Training Instructors School.

NSQC Approved

Annexure-I

Curriculum and training
contents for Joint Basic
Physical Training (JBPT)

SCHEDULE OF TRAINING - JBPT

SI No.	Syllabus Index	Subject	Total Periods
TRAINING ACTIVITIES DURING WORKING HOURS: SIX DAYS PER WEEK EXCEPT SECOND SATURDAYS			
1.	JBPTC / GST / 1 to 12	General Service Training (including Field Craft Training camp)	590
2.	JBPTC / Eng / 1 to 4	English	350
3.	JBPTC / GSK / 1 to 11	General Service Knowledge	165
4.	JBPTC / Comp / 1 to 08	Basic Computer Training	50
5.	JBPTC/MAC/1 to 07	Mentoring & Counselling	45
TOTAL (SI. No. 1 TO 5)		1200	
TRAINING ACTIVITIES BEYOND WORKING HOURS – 200 PERIODS			
6.	JBPTC / Hindi / 1 to 6	Hindi Training	36
7.	JBPTC / WTC / 1	Weak Trainees Classes / Night Classes	64
8.	JBPTC / GSD / 1	General Service Duties & Station Duties	100
TOTAL (SL NO 6 to 8)		200 periods	
GRAND TOTAL (SI. No. 1 TO 8)		1400 periods	
TOTAL EFFECTIVE TRAINING PERIODS		1400 periods=1400x45/60=1050 hour	

Annexure-II

(Curriculum and training contents for Trade Phase Training Term – I)

COMPUTATION OF EFFECTIVE PERIODS: ENVIRONMENTAL SUPPORT SERVICES ASSISTANT (ESSA)

TERM-I

Sl No	Subject (Common activities)	Total periods	Total Hours
1.	Health run, PT and OTW	166	$166 \times 45 / 60 = 124.30$
2.	GST	48	$48 \times 45 / 60 = 80.45$
3.	Mentoring, counselling and other allied activities like guest lecture for personality development	30	$28 \times 45 / 60 = 21.00$
4.	English	100	$100 \times 45 / 60 = 75.00$
5.	Computer and IW fundamentals	30	$30 \times 45 / 60 = 22.30$
6.	Trade Subjects	450	$450 \times 45 / 60 = 337.30$
7.	Mid Term, End Term & Periodic Test	56	$56 \times 45 / 60 = 42.00$
Total		880	$880 \times 45 / 60 = 660.00$

Annexure-III

(Curriculum and training contents for Trade Phase Training Term – II)

COMPUTATION OF EFFECTIVE PERIODS: ENVIRONMENTAL SUPPORT SERVICES ASSISTANT (ESSA)

TERM-II

Sl No	Subject (Common activities)	Total periods	Total Hours
1.	Health run, PT and OTW	148	148x45/60=111.00
2.	GST	48	48x45/60=80.45
3.	Mentoring, counselling and other allied activities like guest lecture for personality development	28	28x45/60=21.00
4.	Computer and IW fundamentals	37	37x45/60=27.45
5.	Aerospace safety	28	36x45/60=27.00
6.	IMMOLS	20	20x45/60=15.00
7.	Trade Subjects	447	447x45/60=357.45
8.	Periodic Test & Mid Term	20	20x45/60=15.00
9.	Pre-REB & REB examination	104	104x45/60=78.00
Total		880	880x45/60=660.00

Annexure-IV

(Curriculum and training contents for Trade Phase Training Term – III)

COMPUTATION OF EFFECTIVE PERIODS: ENVIRONMENTAL SUPPORT SERVICES ASSISTANT (ESSA)

TERM-III

Sl No	Subject (Common activities)	Total periods	Total Hours
1.	Health run, PT and OTW	166	$166 \times 45 / 60 = 124.30$
2.	GST	48	$48 \times 45 / 60 = 80.45$
3.	Mentoring, counselling and other allied activities like guest lecture for personality development	30	$30 \times 45 / 60 = 22.30$
4.	Aerospace safety	08	$28 \times 45 / 60 = 21.00$
5.	Trade Subjects	604	$604 \times 45 / 60 = 453.00$
6.	Mid Term & Periodic Test	24	$16 \times 45 / 60 = 12.00$
Total		880	$880 \times 45 / 60 = 660.00$

Annexure-V

(Curriculum and training contents for Trade Phase Training Term – IV)

COMPUTATION OF EFFECTIVE PERIODS: ENVIRONMENTAL SUPPORT SERVICES ASSISTANT (ESSA)

TERM-IV

Sl No	Subject (Common activities)	Total periods	Total Hours
1.	Health run, PT and OTW	144	144x45/60=108.00
2.	GST	48	48x45/60=80.45
3.	General skill development	33	33x45/60=24.45
4.	Trade Subjects	531	531x45/60=398.15
5.	Mid Term, Pre-REB & REB	108	108x45/60=81.00
6.	Clearance & Passing out	16	16x45/60=12.00
Total		880	880x45/60=660.00

Note: Total training hours for TPT Term-I, Term-II, Term-III and Term-IV is 2640 (Specific to trade is 918 hours and other activities like examination, practical training etc is 1722 hrs. Total is 918 + 1722 = 2640 hours)

Annexure-VI

[Air Force Order (AFO) 57/15
specifying the role of ESSA]

ENVIRONMENTAL SUPPORT SERVICES ASSISTANT: AIRCRAFTMAN

SWO's/UWO's Office.	
Tasks performed	Posses knowledge to carry out the tasks
<p>1. (a) Watching discipline and reporting on matter of office equipment and individuals. (b) Maintenance of the leave register, duty roster, compiling parade state and strength. (c) Escort duties.</p> <p>2. Hygiene camp and personnel.</p> <p>3. Fire Section. (a) Types of fire. (b) Fire appliance operation and assists in their maintenance. (c) Fire tenders, their operation and maintenance.</p> <p>4. Take photograph of exterior and interior with ground cameras.</p> <p>5. Prepare processing solutions do</p>	<p>1. (a) General service discipline in and out of the camp, dress regulations; care and maintenance of office and Air Force equipment. (b) Leave rules and regulations of airmen, maintenance of duty rosters, records of parade state and ration strength, use of common forms used in the IAF. (c) Detailed orders for escort duties and security principal and rules.</p> <p>1. Principal of elementary Hygiene, for personnel and environment.</p> <p>3. (a) Different types of fire. (b) Operation and maintenance of First Aid Fire appliances. (c) Different methods and application of fire tenders, appliances and Trailers, Hose drill. Knowledge on computer literacy and typing. Knowledge of handling casual labour contract through outsourcing proposals and management of conservancy services. Knowledge of vermiculture/ horticulture and make use of the system. Knowledge for submission of DRSS through e-system. Knowledge of fund management on casual labour contract through outsourcing proposal. Knowledge of fire audit and procedure to conduct fire audit system</p> <p>4. Physics of light & electricity, principle of pinhole camera and optics. Care & handling of ground camera and accessories.</p> <p>5. Photographic chemistry; chemical formulas;</p>

<p>routine processing of air & cine films; making contact and enlarge print.</p> <p>6. Load magazines of all air cine and recorder cameras.</p> <p>7. Produce photographs using the technique of subject brightness range of objective.</p> <p>8. Undertake processing of air and cine films by time and temperature method in static and mobile photo section; intensification and reduction.</p> <p>9. (a) Operate air, Cine & Recorder Cameras: Epdiascopes and projectors.</p> <p>(b) Use ground cameras for specialized work.</p> <p>10. Carry out touching of Negative as required.</p> <p>11. Digital still photography.</p> <p>12. Digital video recording.</p> <p>13. Image editing and movie creation.</p>	<p>characteristics of negative and printing materials; dark room layout technique of processing and of contact and projection printing, general safety and fire precaution; types of corrosion and its preventive.</p> <p>6. Function of air, cine and recorder cameras; procedures of magazine loading and friction testing.</p> <p>7. Light values and manipulation of exposure meters.</p> <p>8.</p> <p>(a) Elementary sensitometer.</p> <p>(b) Storage of sensitised material, chemicals and poisons.</p> <p>(c) Operation & function of Printers & Enlarges.</p> <p>9. (a) Function and operation of air, Cine and Recorder Cameras: Epdiascopes & projectors.</p> <p>(b) Elementary Optical calculation: principles of coupled range finders, flash photographic technique and colour photography and printing.</p> <p>10. Method & materials for touching the negatives.</p> <p>11. Functioning of Digital SLR Camera.</p> <p>12. Function of Digital video camera.</p> <p>13. Knowledge on various image editing softwares.</p> <p>14. Knowledge on video editing and movie making software.</p>
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TASK RELATED TO MACHINIST	
<p>Under supervision and guidance be able to carry out the following:-</p> <p>(a) Daily servicing of lathes in use.</p> <p>(b) Grinding lathe tools in common use.</p> <p>(c) Production to workshop drawings.</p> <p>(d) To carry out simple turning tasks, in ferrous and non ferrous metals and their alloys, such as:-</p> <p>(i) Parallel and taper turning.</p> <p>(ii) Facing knurling and boring.</p> <p>(iii) Internal and external “Y” form thread cutting.</p>	<p>Elementary knowledge of :-</p> <p>(a)</p> <p>(i) Classification, construction and types of lathes.</p> <p>(ii) Principles, working, care and precautions, checks for truth, scope, limitations of lathes in service.</p> <p>(b) Classes of steel used for manufacture of lathe tools and types and shapes and their uses; precautions when grinding tools; use of templates and gauges to obtain correct shapes and angles; care, maintenance and use of tools, precision instruments and gauges; elementary knowledge of heat treatment of steel, workshop practice and safety precautions.</p> <p>(c) Principles of workshop drawing given either in fraction of inches or decimal systems.</p> <p>(d) Function, method mounting using and removing of various components and accessories of lathe. A general knowledge of composition, “Machining” and physical properties and engineering uses of metals and their alloys; speed and feed for turning operations; property and uses of cutting lubricants; standard limit systems; tolerance and allowances.</p> <p>(i) Morse and other standard tapers; calculation, required and setting of lathe while taper turning.</p> <p>(ii) Purpose and use of various lathe accessories such as; centre, chuck face plate, milling attachments, knurling tools etc and their applications.</p> <p>(iii) Types and uses of all form of threads definition and meaning of thread terms, sequence of lathe operations, calculation and determining trains of gear for screw</p>

<p>(e) Operate a capstan or turret lathe for as simple repetition job involving more than three different operations.</p> <p>(f) Identification of metals.</p> <p>(g) Marking out of jobs.</p> <p>(h) Operate and carry out very simple job on drilling and horizontal milling machines.</p> <p>(j) Fire precautions</p>	<p>cutting (Metric and English threads).</p> <p>(e) Construction, types and operation of capstan and turret lathes; function and use of components accessories, daily servicing procedure and safety precautions.</p> <p>(f) Identification of metals by application of simple workshop terms.</p> <p>(g) Types of marking out tools and their use; precautions in use; elementary calculations.</p> <p>(h) (i) Classification, construction and use of various drilling machines; type, material and classification of drills and sleeves, definition of cutting speed and feed in relation to lathe and drilling machines. (ii) General knowledge of shaping, slotting planning and different types of grinding machines; tools, cutting and grinding wheels used in these machines. (iii) Safety precautions, general knowledge of sheet metal work, revetting and types of revetted joints. Weldings, brazing, smithy and carpentry and their common tools. (iv) General knowledge of equipment procedure, class and categories of stores and IAF forms.</p> <p>(j) Knowledge of fire extinguisher and their operation.</p>
TASK RELATED TO PHOTO TECH	
<p>1. Take photograph of exterior and interior with ground cameras.</p> <p>2. Prepare processing solutions do routine processing of air & cine films; making contact and enlarge print.</p>	<p>1. Physics of light & electricity, principle of pinhole camera and optics. Care & handling of ground camera and accessories.</p> <p>2. Photographic chemistry; chemical formulas; characteristics of negative and printing materials; dark room layout; technique of processing and of contact and</p>

<p>3. Load magazines of all air cine and recorder cameras.</p> <p>4. Produce photographs using the technique of subject brightness range of objective.</p> <p>5. Undertake processing of air and cine films by time and temperature method in static and mobile photo section; intensification and reduction. (a) Operate air, Cine & Recorder Cameras: Epidiascopes and projectors. (b) Use ground cameras for specialized work.</p> <p>6. Carry out touching of Negative as required.</p> <p>7. Digital still photography.</p> <p>8. Digital video recording.</p> <p>9. Image editing and movie creation.</p>	<p>projection printing, general safety and fire precaution; types of corrosion and its preventive.</p> <p>3. Function of air, cine and recorder cameras; procedures of magazine loading and friction testing.</p> <p>4. Light values and manipulation of exposure meters. (a) Elementary sensitometer. (b) Storage of sensitised material, chemicals and poisons. (c) Operation & function of Printers & Enlarges.</p> <p>5. (a) Function and operation of air, Cine and Recorder Cameras: Epidiascopes & projectors. (b) Elementary Optical calculation: principles of coupled range finders, flash photographic technique and colour photography and printing.</p> <p>6. Method & materials for touching the negatives.</p> <p>7. Functioning of Digital SLR Camera.</p> <p>8. Function of Digital video camera.</p> <p>9. Knowledge on various image editing softwares. Knowledge on video editing and movie making software.</p>
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Annexure-VII

(Blue Print of REB(T))

REGIONAL EXAMINING BOARD (TRAINING), AIR FORCE**BLUE PRINT OF EXAMINATION SCHEME****IPT (MCKT) EXAMINATION: ESSA****SECTION –A**Total Marks: 500

1. The examination consists of three parts namely Part-I, Part-II, Part-III (A) and Part III (B). The details of part wise examination is given below :-

PART No.		NATURE OF EXAMINATION	DURATION OF EXAM	MARKS ALLOTTE D	EXAM SCHEME PLACED AT
Part - I		Trade (Theory)	3 Hours	100	Section 'B'
Part - II		Trade (Theory)	3 Hours	100	Section 'C'
Part – III (A)	Part - III (A1)	Written Practical	1 Hrs 30 Minutes	50	Section 'D'
	Part - III (A2)	Trade Practical	As required	150	
Part - III (B)		Viva-Voce	As required	100	Section 'E'

DISTRIBUTION OF MARKS AND QUESTIONS: PART- I AND PART-II

TYPE OF QUESTION	No. OF QUESTIONS	MARKS FOR EACH QUESTION	TOTAL MARKS
MCQ	20	01	20
VSA	10	02	20
SA	10	03	30
LA	06	05	30
TOTAL	46	--	100

- The minimum qualifying standard is 50% marks in each Part and 50% in Aggregate of all parts of IPT examination.
- The effective date of implementation of this blue print is from IPT Intake No. 02/2015 onwards.
- Syllabus Reference: Syllabus approved by Air HQ signal No. ATA/55 dated 29 Dec 15.
- Scheme of examination and assignment of marks conform vide TCASI Part II/TG/01/2015.
- The guidelines issued by GEB for preparation of blue print have been followed.

Annexure-VII

{Blue Print of REB (T)}

SCHEME OF EXAMINATION
PART-I WRITTEN (THEORY) EXAMINATION
DISTRIBUTION OF MARKS AND SYLLABUS
SECTION – B

Duration: 03 Hrs

Marks: 100

Sl No	Syllabus Index	Topic	Total Theory Periods	Distribution of Questions													
				MCQ			DTQ										
							VSA			SA			LA				
				F	C	A	F	C	A	F	C	A	F	C	A		
1	ESSA/GA/1	Role of ESSA Trade	140														
2	ESSA/GA/2	Environment Services															
3	ESSA/GA/3	Dress & Discipline															
4	ESSA/GA/4	Station Duties															
5	ESSA/GA/5	DRSS															
6	ESSA/GA/6	Ceremonial Parade Arrangements		6	3	1	2	2	-	2	3	-	2	-	1		
7	ESSA/GA/7	Health, Hygiene & Sanitation															
8	ESSA/GA/8	AF Flags & Ensigns															
9	ESSA/GA/9	Tentage															
10	ESSA/GA/11	Welfare															
11	ESSA/BHCT/1	Bird Hazard Combat Team	17	-	1	-	-	-	1	1	-	-	-	-	-	-	
12	CS/IMMOLS/1	IMMOLS	16	1	-	-	1	1	-	-	-	-	-	-	-	-	
13	ESSA/PH/1	Importance of Photography	121														
14	ESSA/PH/2	Light and Lens															
15	ESSA/PH/3	Shutter and Aperture															
16	ESSA/PH/4	Photo Chemistry															
17	ESSA/PH/5	Exposure Technique															
18	ESSA/PH/6	35 MM SLR Camera															
19	ESSA/PH/7	Cine Camera/ Recorder															
20	ESSA/PH/8	Cine Film Processing		4	3	1	3	-	-	2	1	1	1	2	-		
21	ESSA/PH/9	Printing Technique															
22	ESSA/PH/10	Theory of Colours															
23	ESSA/PH/11	Studio Lighting															
24	ESSA/PH/12	Storage of Data & Maintenance of Photo Equipment															
25	ESSA/PH/13	Photo Organisation and Administration															
		Total	294	11	7	2	6	3	1	5	4	1	3	2	1		

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART -II WRITTEN (THEORY) EXAMINATION
DISTRIBUTION OF MARKS AND SYLLABUS
SECTION - C

Duration: 03 Hrs

Marks: 100

SI No	Syllabus Index	Topic	Total Theory Periods	MCQ			Distribution of Questions								
							DTQ								
				VSA			SA			LA					
F	C	A	F	C	A	F	C	A	F	C	A				
1	ESSA/GA/10	Funds	110	4	3	-	3	1	-	2	1	1	1	1	-
2	ESSA/GA/12	Air Force Law													
3	ESSA/GA/13	CO's Orderly Room Procedure													
4	ESSA/GA/14	Redressal of Grievances (ROG)													
5	ESSA/GA/15	Court Martial Arrangements													
6	ESSA/GA/16	Event Management													
7	ESSA/GA/17	Funeral Parade													
8	ESSA/GA/18	Inventory Management													
9	ESSA/GA/19	Monthly Ration Summary & Ration Census													
10	ESSA/GA/20	Casual Labour & Conservancy Services													
11	ESSA/GA/21	Management of GP 'C' Civilian													
12	ESSA/GA/22	PAD GD													
13	ESSA/BHCT /2	Bird Hazard Combat Team	17	1	-	-	-	-	1	-	1	-	-	-	-
14	SSTT/AS/1-9	Aerospace Safety	28	1	-	1	-	-	-	-	1	-	1	-	-
15	ESSA/PH/14	Digital Photography & Accessories	137	5	4	1	3	2	-	3	1	-	1	1	1
16	ESSA/PH/15	Basic Digital Camera													
17	ESSA/PH/16	Digital SLR Camera													
18	ESSA/PH/17	Adobe Photoshop													
19	ESSA/PH/18	Videography													
20	ESSA/PH/19	Video Editing													
Total			292	11	7	2	6	3	1	5	4	1	3	2	1

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART- III (A): TRADE PRACTICAL
DISTRIBUTION OF MARKS AND SYLLABUS
SECTION – D

PART-III A-1: WRITTEN PRACTICAL

Duration: 1:30 Hrs

Marks: 50

Sl No	Syllabus Index	Topic	Total Practical Periods	Marks
1	ESSA/GA/1	Role of ESSA Trade in IAF	94	50
2	ESSA/GA/5	DRSS		
3	ESSA/GA/6	Ceremonial Parade Arrangements		
4	ESSA/GA/7	Health, Hygiene & Sanitation		
5	ESSA/GA/8	AF Flags & Ensigns		
6	ESSA/GA/13	CO's Orderly Room Procedure		
7	ESSA/GA/15	Court Martial Arrangements		
8	ESSA/GA/16	Event Management		
9	ESSA/GA/19	Monthly Ration Summary & Ration Census		
10	ESSA/GA/22	PAD GD		
11	ESSA/BHCT/2	BHCT		
12	CS/IMMOLS/1-8	IMMOLS		
Total			94	50

PART-III A-2: JOB PRACTICAL

Duration: As required

Marks: 150

SI No	Syllabus Index	Topic	Total Practical Periods	Marks
1	ESSA/GA/9	Tentage	18	12
2	ESSA/PH/7	Cine Camera/ Recorder	216	138
3	ESSA/PH/11	Studio Lighting		
4	ESSA/PH/13	Photo Organisation & Administration		
5	ESSA/PH/14	Digital Photography and Accessories		
6	ESSA/PH/15	Basic Digital Camera		
7	ESSA/PH/16	Digital SLR Camera		
8	ESSA/PH/17	Adobe Photoshop		
9	ESSA/PH/18	Videography		
10	ESSA/PH/19	Video Editing		
Total				

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART- III (B): TRADE VIVA-VOCE
DISTRIBUTION OF MARKS AND SYLLABUS
SECTION - E

Duration: As required**Marks: 100**

Syllabus Index	Topic	Total Theory Periods	Distribution of marks
ESSA/GA/1	Role of ESSA Trade	250	43
ESSA/GA/2	Environment Services		
ESSA/GA/3	Dress & Discipline		
ESSA/GA/4	Station Duties		
ESSA/GA/5	DRSS		
ESSA/GA/6	Ceremonial Parade Arrangements		
ESSA/GA/7	Health, Hygiene & Sanitation		
ESSA/GA/8	AF Flags & Ensigns		
ESSA/GA/9	Tentage		
ESSA/GA/10	Funds		
ESSA/GA/11	Welfare		
ESSA/GA/12	Air Force Law		
ESSA/GA/13	CO's Orderly Room Procedure		
ESSA/GA/14	Redressal of Grievances (ROG)		
ESSA/GA/15	Court Martial Arrangements		
ESSA/GA/16	Event Management		
ESSA/GA/17	Funeral Parade		
ESSA/GA/18	Inventory Management		
ESSA/GA/19	Monthly Ration Summary & Ration Census		
ESSA/GA/20	Casual Labour & Conservancy Services		
ESSA/GA/21	Management of GP 'C' Civilian		
ESSA/GA/22	PAD GD		
ESSA/BHCT/1-2	Bird Hazard Combat Team	78	13
CS/IMMOLS/1-8	IMMOLS		
SSTT/AS/1-9	Aerospace safety		
ESSA/PH/1	Importance of Photography	258	44
ESSA/PH/2	Light and Lens		
ESSA/PH/3	Shutter and Aperture		
ESSA/PH/4	Photo Chemistry		

ESSA/PH/5	Exposure Technique		
ESSA/PH/6	35 MM SLR Camera		
ESSA/PH/7	Cine Camera/ Recorder		
ESSA/PH/8	Cine Film Processing		
ESSA/PH/9	Printing Technique		
ESSA/PH/10	Theory of Colours		
ESSA/PH/11	Studio Lighting		
ESSA/PH/12	Storage of Data & Maintenance of Photo Equipment		
ESSA/PH/13	Photo Organisation and Administration		
ESSA/PH/14	Digital Photography & Accessories		
ESSA/PH/15	Basic Digital Camera		
ESSA/PH/16	Digital SLR Camera		
ESSA/PH/17	Adobe Photoshop		
ESSA/PH/18	Videography		
ESSA/PH/19	Video Editing		
	Total	586	100

Annexure-VII

(Blue Print of REB(T))

REGIONAL EXAMINING BOARD (TRAINING), AIR FORCE**BLUE PRINT OF EXAMINATION SCHEME****IPT (CEKT) EXAMINATION: ESSA****SECTION –A**Total Marks: 500

1. The examination consists of four parts namely Part-I, Part-II, Part-III (A & B) and Part IV (A & B). The details of part wise examination is given below :-

PART No.	NATURE OF EXAMINATION	DURATION OF EXAM	MARKS ALLOTTE D	EXAM SCHEME PLACED AT
Part - I	Trade (Theory)	3 Hours	100	Section 'B'
Part - II	Trade (Theory)	3 Hours	100	Section 'C'
Part - III (A)	Trade Practical	As required	150	Section 'D'
Part - III (B)	Trade Viva-Voce	As required	50	Section 'E'
Part - IV (A)	Workshop Practical	As required	60	Section 'F'
Part - IV (B)	Workshop Viva-Voce	As required	40	Section 'G'

DISTRIBUTION OF MARKS AND QUESTIONS: PART- I AND PART-II

TYPE OF QUESTION	No. OF QUESTIONS	MARKS FOR EACH QUESTION	TOTAL MARKS
MCQ	20	01	20
VSA	10	02	20
SA	10	03	30
LA	06	05	30
TOTAL	46	--	100

- The minimum qualifying standard is 50% marks in each Part and 50% in Aggregate of all parts of IPT examination.
- The effective date of implementation of this blue print is from IPT Intake No. 02/2015 onwards.
- Syllabus Reference: Syllabus approved by Air HQ signal No. ATA/55 dated 29 Dec 15.
- Scheme of examination and assignment of marks conform vide TCASI Part II/TG/01/2015.
- The guidelines issued by GEB for preparation of blue print have been followed.

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART-I WRITTEN (THEORY) EXAMINATION
DISTRIBUTION OF MARKS AND SYLLABUS
SECTION – B

Duration: 03 Hrs

Marks: 100

Sl No	Syllabus Index	Topic	Total Periods (Theory + Demo)	MCQ			Distribution of Questions								
							DTQ								
							VSA			SA			LA		
				F	C	A	F	C	A	F	C	A	F	C	A
1	ESSA/VER	Vermiculture	35 (31+4)	2	1	-	-	2	-	-	-	1	1	-	-
2	ESSA/HORT	Horticulture													
3	SSTT/AS/10-15	Aerospace Safety	06 (4+2)	-	-	-	-	-	1	-	-	-	-	-	-
4	ESSA/DM	Disaster Management	26	1	1	-	-	-	-	-	1	-	1	-	-
5	ESSA/FF/1	Fire organization in IAF	178	8	5	2	6	1	-	5	3	-	1	2	1
6	ESSA/FF/2	Fire precaution & protection													
7	ESSA/FF/3	Theory of combustion													
8	ESSA/FF/4	Fire extinguishing media													
9	ESSA/FF/6	Fire hazards & prevention													
10	ESSA/FF/7	Extendable ladder drill													
11	ESSA/FF/8	Techniques of fire fighters													
12	ESSA/FF/9	Minor fire fighting appliances													
13	ESSA/FF/10	Installation of fire points & yellow colour scheme													
14	ESSA/FF/11	Fire rescue & stretcher drill													
15	ESSA/FF/12	Hose & hose fittings													
16	ESSA/FF/13	Fire drills													
17	ESSA/FF/14	Major fire fighting appliances													
18	ESSA/FF/15	Fire protective gears													
19	ESSA/FF/16	Fire alarm system & objectives													
20	ESSA/FF/17	Hydrant & sprinkler system													
		Total													

Annexure-VII

SCHEME OF EXAMINATION
PART -II WRITTEN (THEORY) EXAMINATION
DISTRIBUTION OF MARKS AND SYLLABUS

SECTION - C

Duration: 03 Hrs

Marks: 100

SI No	Syllabus Index	Topic	Total Periods (Theory + Demo)	MCQ			Distribution of Questions								
							DTQ								
				VSA			SA			LA					
F	C	A	F	C	A	F	C	A	F	C	A				
1	ESSA/FF/5	Rural Fire	56 (52+4)	3	2	-	1	-	1	1	2	-	1	-	-
2	ESSA/FF/18	Fire Safety and Audit													
3	ESSA/FF/19	Fire Accidents													
4	ESSA/FF/20	Fire Safety in High Rise Building													
5	ESSA/FF/21	Rope and Lines													
6	ESSA/FF/22	Fire Services Week													
7	ESSA/FF/23	Crash Fire Fighting													
13	MACH/WT/1	Workshop Technology	72 (53+19)	3	2	1	2	-	-	1	1	1	1	1	-
14	MACH/ED/2	Basic Engineering Drawing	15 (14+1)	-	-	1	-	1	-	1	-	-	-	-	-
15	MACH/MST/2	Machine Shop Technology	102 (72+30)	5	3	-	3	2	-	2	1	-	1	1	1
Total			245	11	7	2	6	3	1	5	4	1	3	2	1

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART- III (A): TRADE PRACTICAL
DISTRIBUTION OF MARKS AND SYLLABUS

SECTION – D**Duration: As required****Marks: 150**

Group	Syllabus Index	Topic	Total Practical Periods	Marks
A1	ESSA/VERMI	Vermiculture	56 (2+52+2)	18
	ESSA/HORTI	Horticulture		
	ESSA/DM	Disaster Management		
A2	ESSA/FF/7	Extendable ladder drill	161	52
	ESSA/FF/9	Minor fire fighting appliances		
	ESSA/FF/11	Fire rescue & stretcher drill		
	ESSA/FF/12	Hose & hose fittings		
	ESSA/FF/13	Fire drills		
	ESSA/FF/14	Major fire fighting appliances		
	ESSA/FF/15	Fire protective gears		
	ESSA/FF/21	Rope and Lines		
	ESSA/FF/22	Fire Services Week		
ESSA/FF/23	Crash Fire Fighting			
A3	MACH/MST/3	Machine Shop Technology	248 (198+50)	80
	MACH/SSD/5	Specific Skill Development		
Total			465	150

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART- III (B): TRADE VIVA-VOCE
DISTRIBUTION OF MARKS AND SYLLABUS

SECTION - E**Duration: As required****Marks: 50**

Syllabus Index	Topic	Total Periods Theory + Demo	Distributio n of marks
ESSA/VER	Vermiculture	35 (6+2+25+2)	4
ESSA/HORT	Horticulture		
SSTT/AS/10-15	Aerospace Safety	32 (4+2+26)	4
ESSA/DM	Disaster Management		
ESSA/FF/1-23	Fire Fighting	234 (197+37)	29
MACH/MST/3	Machine Shop Technology	102 (72+30)	13
	Total	403	50

SECTION - F**Duration: As required****Marks: 60**

SI No.	Syllabus Index	Topics	Practical Periods	Marks
1	MACH/WT/1	Workshop Technology	62 (9+48+5)	60
2	MACH/BWT/1	Workshop Technology		
3	MACH/ED/2	Basic Engineering Drawing		
	Total		62	60

Annexure-VII

(Blue Print of REB(T))

SCHEME OF EXAMINATION
PART- III (B): TRADE VIVA-VOCE
DISTRIBUTION OF MARKS AND SYLLABUS

SECTION -G

Duration: As required

Marks: 40

SI No.	Syllabus Index	Topics	Total Periods Theory + Demo	Marks
1	MACH/WT/1	Workshop Technology	87 (48+15+5+4+14+1)	40
2	MACH/BWT/1	Workshop Technology		
3	MACH/ED/2	Basic Engineering Drawing		
Total			87	40