



**PARLIAMENT OF THE DEMOCRATIC
SOCIALIST REPUBLIC OF
SRI LANKA**

**MEASUREMENT UNITS, STANDARDS AND
SERVICES
ACT, No. 35 OF 1995**

[Certified on 21st December, 1995]

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**Measurement Units, Standards and Services
Act, No. 35 of 1995**

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L.D.—O. 50/81.

**AN ACT TO REVISE AND CONSOLIDATE THE LAW RELATING TO
WEIGHTS AND MEASURES; AND TO PROVIDE FOR MATTERS
CONNECTED THEREWITH OF INCIDENTAL THERETO**

BE it enacted by the Parliament of the Democratic Socialist
Republic of Sri Lanka as follows:—

1. This Act may be cited as the Measurement Units, Standards and Services Act, No. 35 of 1995 and shall come into operation on such date (hereinafter referred to as the "appointed date") as the Minister may appoint by Order published in the Gazette.

Short title
and date
of operation.

PART I

UNITS OF MEASUREMENT

2. The International System of Units (SI) and the definitions of those units as specified by the General Conference of Weights and Measures and as set out in the First Schedule hereto shall constitute the units of measurement for all purposes in Sri Lanka:

Units of
measure-
ment.

Provided that such units of measurement as set out in the Second Schedule hereto as defined in terms of the Corresponding International Units of Measurement shall be permitted to be used for such periods of time as may be prescribed.

PART II

**ESTABLISHMENT OF THE MEASUREMENT UNITS, STANDARDS AND
SERVICES DEPARTMENT AND THE NATIONAL MEASUREMENT
LABORATORY**

3. There shall be established for the purpose of this Act—

(a) a Department or a Division of a Department to be known as the Measurement Units, Standards and Services Department; and

(b) a laboratory within that Department to be known as the National Measurement Laboratory (hereinafter referred to as "the laboratory").

Establish-
ment of
Measurement
Units,
Standards
and Services
Department
and National
Measurement
Laboratory.

4. (1) There may, for the purpose of this Act, be appointed—

(a) a person by name or by office to be the Director of Measurement Units, Standards and Services (hereinafter referred to as the "Director")

Appoint-
ment of
Director,
&c.

- (b) a person by name or by office to be the Deputy Director of Measurement Units, Standards and Services;
- (c) such number of persons as may be necessary to be Assistant Directors of Measurement Units, Standards and Services;
- (d) such number of persons as may be necessary to be Superintendents of Measurement Units, Standards and Services;
- (e) such number of persons as may be necessary to be Assistant Superintendents of Measurement Units, Standards and Services; and
- (f) such number of officers as may be necessary for the purpose of giving effect to the principles and provisions of this Act.

(2) The Deputy Director of Measurement Units, Standards and Services appointed under paragraph (b) of subsection (1), may subject to the general direction and control of the Director, exercise, perform and discharge all or any of the powers, duties and functions conferred or imposed on, or assigned to, the Director by or under this Act.

(3) The Assistant Superintendents of Measurement Units, Standards and Services appointed under paragraph (e) of subsection (1) may, subject to the general direction and control of the Superintendents of Measurement Units, Standards and Services, exercise, perform and discharge all or any of the powers, duties and functions conferred or imposed on, or assigned to, such Superintendents under this Act.

PART III

STANDARDS OF UNITS OF MEASUREMENT

Sri Lanka
Standards

1. (1) For the purposes of this Act, the Minister may, from time to time, procure such standards of the units of measurement as he may consider necessary.

(2) Every standard of any unit of measurement procured under subsection (1) shall be an equivalent of a unit of measurement as defined in the First Schedule hereto, or any multiple or submultiple of any such units of measurement.

(3) A description of every standard of any unit of measurement procured under subsection (1) shall be published in the Gazette on a direction by the Director.

(4) Every standard of any unit of measurement procured under subsection (1) shall be calibrated and certified at the Laboratory of the International Bureau of Weights and Measures or at any other National Laboratory of any other country or calibrated by a standard method before such a standard is brought into use in Sri Lanka :

Provided that such calibration shall not be necessary in the case of any standard or instrument which by virtue of its nature is itself a fundamental standard.

(5) The Minister may, by notification published in the Gazette, declare that a standard of any unit of measurement, which has been procured and published under this section, shall be brought into use in Sri Lanka and such standard shall upon publication become a Sri Lanka standard and shall for all purposes whatsoever be deemed to be true and accurate.

6. (1) The Laboratory shall be under the control of the Director, and it shall maintain the Sri Lanka Standards and disseminate the value of such standards to any other Laboratory or Institution and carry out research relevant to these functions.

Sri Lanka
Standards
to be in
the custody
of the
Director.

(2) Every Sri Lanka Standard shall be kept and preserved in the Laboratory under the custody of the Director in such manner as may be prescribed for that purpose.

(3) The Minister shall, in the case of any Sri Lanka Standard which requires any recalibration, cause such standard to be recalibrated once at least in ten years :

Provided, however, that where any Sri Lanka standard of any unit of measurement has to be sent out of Sri Lanka for such purposes, the Minister may cause a reference standard for that unit of measurement to be verified by comparison with such Sri Lanka standard or to be calibrated by a standard method and certified and placed in the custody of the Director and such reference standard shall, during such time as the Sri Lanka standard is out of Sri Lanka, be deemed to be a Sri Lanka standard.

7. (1) The Minister may, for the purposes of this Act, procure such derivative standards of the Sri Lanka standard, to be known as reference standards and place such standards in the custody of the Director. Every such reference standard shall be calibrated by comparison with a Sri Lanka standard or at a specified standards laboratory by a standard method.

Reference
Standards

(2) Every reference standard shall be calibrated in the laboratory at least once in every five years, after its first calibration, on a direction issued by the Director.

(3) The Minister may, by notification published in the Gazette, declare that a reference standard of any unit of measurement procured under subsection (1), shall be brought into use in Sri Lanka and such reference standard shall be deemed to be true and accurate until the contrary is proved.

Secondary Standards.

8. (1) The Director may procure from time to time, such other secondary and tertiary standards, which are derived from the Sri Lanka standards and from the reference standards, as may be necessary for the purposes of this Act.

(2) The Director shall cause every such secondary and tertiary standard to be verified or calibrated, and authenticated or certified. Every standard so authenticated or certified shall be deemed to be true and accurate until the contrary is proved.

(3) Every secondary or tertiary standard shall be verified or calibrated at such periods, as may be determined by the Director, by a notification published in the Gazette.

Measurements of physical quantities.

9. All measurements of physical quantities based directly or indirectly on a unit of measurement for which a Sri Lanka standard, reference standard or secondary or tertiary standard has been established, shall be traceable to any such standard.

Certification of calibration.

10. Every person authorised by this Act to carry out any calibration or test or who is directed by the Director to carry out any calibration or test shall issue a certificate of calibration signed by him in the prescribed form.

Judicial notice of standards.

11. A court shall take judicial notice of—

(a) every Sri Lanka standard, reference standard, secondary or tertiary standard;

(b) every certificate of calibration issued under section 10.

PART IV

MEASUREMENTS FOR TRADE

12. (1) Save as otherwise provided in section 34 every contract, bargain, sale or dealing made or had in Sri Lanka whereby any work, goods, wares, merchandise or other things is or are to be done sold, delivered, carried, measured, computed, paid for, or agreed for, by a unit of measurement shall be made and had according to any one of the units of measurement specified in Part I of the Third Schedule.

All contracts, sales &c, and collection of fees or duties to be in terms of authorised units of measurement.

(2) All fees and duties whatsoever charged or collected in Sri Lanka according to any unit of measurement shall be charged and collected according to any one of the units of measurement specified in Part I of the Third Schedule.

(3) The packing in Sri Lanka of any article in a container for the purpose of sale shall be according to any one of the authorised units of measurement, specified in Part I of the Third Schedule.

(4) Every contract, bargain, sale or dealing which is not made or had in accordance with the provisions of subsection (1) shall be void :

Provided, however, that notwithstanding the provisions of this section, a court may, in any case where any person has derived or received any advantage from or under any contract, bargain, sale or dealing, make such order as the court may deem expedient for the purpose of compensating the person from whom or on account of whose act such advantage was derived or received.

13. All the weights and measures specified in Part II of the Third Schedule hereto are declared to be and are referred to in this Act as authorised weights and authorised measures respectively ; and every denomination of weight and measure specified in such Part II of the Third Schedule is hereby declared to be, and referred to in this Act as an authorised denomination of weight or measure.

Weights and measures in Part II of Third Schedule declared to be authorised weights and authorised measures.

14. (1) The Director shall appoint such number of Inspectors of Measurement Services and Devices (hereinafter referred to as 'Inspectors') and other officers as he may consider necessary for the administration of this Act.

Appointment of Inspectors.

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Act, No. 35 of 1995

(2) The Director shall assign every such Inspector appointed under subsection (1) an area, (hereinafter referred to as a "division") in which he shall exercise the powers and discharge the duties conferred or imposed on an Inspector by or under this Act.

(3) No person shall be appointed under this section to be an Inspector unless he holds a certificate in the prescribed form signed by the Director of his competency to be an Inspector. No such certificate shall be issued to any person unless he has been examined by, and passed the prescribed tests to the satisfaction of, the Director.

Tertiary standards.

15. The Director shall provide such number of tertiary standards as he may deem necessary for the use by Inspectors appointed under subsection (1) of section 14. Such standards shall be kept in the Secretariat of each administrative district.

Use of any weight or measure the denomination of which is marked thereon.

16. No person shall use for the purpose of any trade, or have in his possession for the use of any trade—

(a) any weight which purports to be of a denomination equivalent to a denomination specified in Part II of the Third Schedule hereto unless the denomination is marked on the top or side thereof in legible figures and letters; or

(b) any measure of length or volume which purports to be of a denomination equivalent to a denomination specified in Part II of the Third Schedule hereto unless the denomination is marked on the outside thereof in the case of a measure of volume, or on the front face in the case of a measure of length, in legible figures and letters:

Provided that nothing in this section shall be deemed to require the marking of a denomination of any weight, if the small size of such weight render such marking impracticable.

Use of tertiary standards after expiry of period specified and use of instruments not verified.

17. (1) No Inspector shall use any tertiary standard for the purpose of testing any weight or measure at any time after the expiry of the period specified in the direction made under subsection (3) of section 8 calculated from the date on which that standard was last authenticated as correct under subsection (2) of section 8.

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(2) No Inspector shall use for the purpose of this Act any weighing or measuring instrument which is provided for his use unless that instrument has been verified in the prescribed manner.

18. No Inspector shall derive any profit from or be employed in the making, selling or repairing of weights or measures or weighing or measuring instruments.

Inspectors
not be
derive
profit from
making or
selling of
weights and
measures.

19. No person shall sell or expose for sale any weight or measure or weighing or measuring instrument for use in a trade, which has not been verified and stamped by an Inspector with a prescribed mark of verification, or has been certified in the prescribed manner.

Sale of
weight or
measure
which
has not been
verified or
certified.

20. (1) From and after the appointed date, no weight, measure or weighing or measuring instrument shall be—

All weights
measures etc.
to be
approved
by the
Director.

(a) used for the purpose of any trade or be in the possession of any person for use in any trade;

(b) manufactured or be imported for use or be sold for use in any trade.

unless the pattern of such weight, measure or weighing or measuring instrument has been examined and approved by the Director in accordance with the specifications and limits of error, as may be specified by regulations made under this Act, for such purpose. The fee to be charged for any such examination shall be as prescribed.

(2) Where on a subsequent examination of any weight, measure or weighing or measuring instrument which has been approved earlier by the Director it is found to be defective, the Director shall have the power to cancel such earlier approval and also notify any person of such cancellation.

21. (1) Every person who sells, repairs or manufactures or intends to sell, repair or manufacture any weight, measure or weighing or measuring instrument shall register himself with the Director.

Persons
who sell
repair or
manufacture
weights,
instruments
etc. to be
registered.

(2) A fee shall be charged on such registration and the amount of such fee shall be as prescribed.

(3) Every person who seeks to register himself under sub-section (1)—

(a) to repair any weight, measure or weighing or measuring instrument shall—

(i) demonstrate to the satisfaction of the Director, his ability or the ability of persons employed by him, to repair the type of weight, measure or weighing or measuring instrument which he seeks to repair; and

(ii) be in possession of such equipment, tools and other facilities as may be required for the proper execution of such repair;

(b) to manufacture any weight, measure or weighing or measuring instrument shall—

(i) demonstrate to the satisfaction of the Director, his ability or the ability of persons employed by him to manufacture the type of weight, measure or weighing or measuring instrument which he seeks to manufacture;

(ii) be in possession of such equipment, tools and other facilities as may be required for the manufacture or assembly of such a weight, measure or weighing or measuring instrument; and

(iii) send to the Director such drawings and samples as may be required of such weight, measure or weighing or measuring instrument which he intends to manufacture, for pattern approval.

(4) Every person registered under this section, shall be subject to the condition that any weight, measure or weighing or measuring instrument repaired or manufactured by him shall be tested and verified by an Inspector or calibrated by the Director, after such manufacture or repair as the case may be. The Director may, where a person fails to fulfil this condition, cancel his registration.

(5) A person whose registration has been cancelled by the Director under subsection (4) may within one month of such cancellation appeal against such cancellation to the Secretary to the Ministry of the Minister.

22. (1) The Superintendent for each district or area shall fix the dates and the places within such district or area at which each Inspector shall examine and verify weights or measures or weighing or measuring instruments.

Periodical
examination
of weights or
measures or
weighing or
measuring
instruments.

(2) Notice of the date and the place fixed under subsection (1) for the examination and verification of weights or measures or weighing or measuring instruments, shall be given by the Superintendent for the district. The mode and manner in which notice shall be given shall be determined by the Director.

(3) Every Inspector shall at the time and place fixed under this section, examine all equipment namely, weights or measures or weighing or measuring instruments produced before him, and test such equipment by means of such tertiary standards and testing equipment which he considers suitable for the purpose and subject to any condition which may be prescribed or by means of other equipment which has already been tested and which he considers suitable for this purpose.

(4) Nothing in subsection (1) shall be deemed to prevent an Inspector from examining, comparing, or testing any weight or measure or weighing or measuring instrument which is produced before him for examination, at any time or place other than a time or place fixed under this section.

(5) No Inspector shall examine any weight or measure or weighing and measuring instrument under this section, except upon the payment of the prescribed fee for such examination.

23. (1) An Inspector who, upon examination finds any weight or measure or weighing or measuring instrument to be correct and otherwise complying in all respects with the provisions of this Act and of the regulations made thereunder, shall stamp such weight or measure or weighing or measuring instrument in the prescribed manner with the prescribed mark of verification, as well as any other mark as may be prescribed, except that where the weight or measure or weighing or measuring instrument is either too small in size or made of a material which cannot be stamped, the Inspector shall issue a certificate to this effect.

Stamping of
mark of
verification.

(2) No Inspector shall stamp with a mark of verification any weight or measure or weighing or measuring instrument which is not correct or which does not comply with any provision of this Act or any regulation which is applicable in the case of such weight or measure or weighing or measuring instrument, as the case may be.

(3) No Inspector shall stamp any weight or measure with a mark of verification—

(a) unless such weight or measure is of an authorized denomination; and

(b) unless he has tested it by comparison with a tertiary standard of that weight or measure.

Power of
Inspectors to
enter into
any premises
and inspect
weights &c.

24. (1) An Inspector may at any reasonable time enter any factory, shop, store, godown, shed, land, premises or vehicle which is in his division and in which any weight or measure or weighing or measuring instrument is or is suspected to be kept or used for the purpose of any trade, or any article that is packaged and is kept or is suspected to be kept for the purpose of any trade and may—

(a) search for, or require the person for the time being in charge thereof to produce for inspection, all or any of the weights and measures and weighing and measuring instruments kept therein;

(b) inspect any weight or measure which is found therein or produced for examination, and compare it with a tertiary standard of that weight or measure;

(c) inspect and test any weighing or measuring instrument which is found therein or produced for examination;

(d) seize and detain for the purpose of a prosecution for an offence under this Act or any other law, any weight or measure or weighing or measuring instrument which is found upon comparison or test to be not correct or false, or which appears to the Inspector to have been or to be likely to be used in contravention of any provision of this Act; and

(e) inspect and weigh, or inspect and measure, any article which is kept therein, offered or exposed for sale in order to ascertain whether the provisions of this Act are being complied with in respect of such article, and seize and detain any article in respect

of which or in relation to which a contravention of any provision of this Act has been or is suspected to have been committed.

25. Every weight or measure or weighing or measuring instrument which has been duly stamped by an Inspector under section 23 of this Act, with the prescribed mark of verification may, unless it is found thereafter to be false or not correct, be used in any part of Sri Lanka.

Weight or measure & stamped by Inspectors to be permitted to be used in Sri Lanka.

26. All fees to be levied by the Director for the calibration of any measuring instrument, under the provisions of this Act, shall be credited to the Fund.

Fees levied to be credited to the Fund.

27. Every Inspector shall keep such registers relating to the performance of his duties under this Act as may be required by a direction issued by the Director and shall transmit such registers to the Director for examination at such times as may be stated in the direction.

Registers to be kept by Inspectors.

28. (1) Every person appointed to be an Inspector shall forthwith on his appointment give security in such sum as may be prescribed, for the due discharge of the duties of his office, for the due payment of all fees received by him under this Act, and for the safety of the tertiary standards, stamps and other equipment entrusted to him for the purpose of this Act.

Inspectors to give security.

(2) Where an Inspector is appointed by the Director, the security required under subsection (1) to be given by that Inspector, shall be given under the Public Officers' (Security) Ordinance, and the provisions of that Ordinance shall apply accordingly.

29. Any police officer not below the rank of Sub-Inspector or any Price Control Inspector shall have the power to—

Power of Police officers or Price Control Inspectors to enter any premises to check any weighing or measuring of goods.

(a) enter any premises used for the purpose of any trade in any place or area in Sri Lanka and check any weighing or measuring which is being or which has been done for the purpose of delivering goods to a purchaser;

(b) seize or detain where necessary for the purpose of any prosecution in respect of an offence under section 42 of this Act, any goods which have been so delivered in contravention of the said section.

PART V

OTHER STATUTORY MEASUREMENTS

Minister to direct the periodical certification or certification of any measure or measuring instrument.

30. (1) The Minister may, from time to time, by a directive published in the Gazette, require that any measure or measuring instrument used in the protection of health, the safety of any person, the control of pollution, the protection of the environment or any measurement used in industry or quality control, be submitted for periodical verification or certification in such manner as set out in the directive. A fee may be charged as prescribed for the carrying out of any such periodical verification or certification.

(2) Where a directive is given under subsection (1) the specifications for such measures and measuring instruments, the tolerance permitted and the methods of testing them, shall be as prescribed.

Measure or measuring instruments used by Government Departments or corporations to be calibrated at the Laboratory.

31. Every Government department or corporation which uses a measure or measuring instrument for testing or checking any measuring instrument for the purpose of certification or calibration or for the purpose of checking any measurement for any legal purpose, shall have such measure or measuring instrument calibrated at the laboratory at such intervals as may be specified by a directive published in the Gazette for the purpose.

Units of measurement to be used in transactions relating to land.

32. In all transactions relating to the transfer of land the measurement of every extent of land shall be according to the units of measurements specified in the Second and Third Schedules hereto :

Provided that, when the transfer relates to the land which has been either surveyed or has its boundaries described in a deed on a date prior to January 1, 1983, reference could be made to the unit of measurement so used in the deed, subject to the condition that reference should also be made to the equivalent extent in an authorised unit specified in the Second and Third Schedules hereto, each conversion being arrived at by using the conversion factors prescribed for that purpose by regulation :

Provided further, that where the extent of land is described in those traditional units as may be prescribed, such conversion shall not be required for such period as may be prescribed.

PART VI

MEASUREMENT FOR INDUSTRY ETC.

33. The Director shall provide such facilities as he may consider necessary, for the calibration of weights or measures or weighing or measuring instruments used in industry, engineering or in any other field. All such calibration should be traceable to a Sri Lanka standard or to a reference standard maintained by the laboratory.

Director to provide facilities for calibration of measuring instruments and measuring devices.

34. All weights, measures or weighing or measuring instruments used for industry shall have their pattern approved by the laboratory before manufacture or import. The Minister shall have the power to impose requirements for pattern approval with regard to measuring instruments used for any other purpose.

Weights, Measures &c. used in trade or industry to have their pattern approved by the Laboratory.

PART VII

FUND

35. (1) For the purpose of this Act, there shall be established a Fund which shall be maintained in such manner as the Secretary to the Ministry of the Minister may direct.

Fund.

(2) There shall be paid into the Fund two-thirds of each and every fee charged and prescribed. The balance one-third of each and every fee shall be paid into the Consolidated Fund.

(3) There shall be paid out of the Fund—

(a) all sums of money paid as annual dues and other payments as a member state of the International Organisation of Legal Metrology and the expenses incurred in the participation at its meetings;

(b) all expenses incurred in the calibration of Sri Lanka reference, secondary and tertiary standards including expenses incurred in the participation in any international or regional programme for the intercomparison of such standards;

(c) all expenses incurred in the cost of maintenance of the Measurement Units, Standards and Services Department and the laboratory, and all other offices where standards are maintained;

(d) all sums of money paid as rewards to any person or persons under section 57;

- (e) all expenses incurred in the maintenance machinery, equipment and vehicles used in Measurement Units Standards and Services Department and the laboratory;
- (f) all expenses incurred in providing facilities for testing and verifying weights and measures weighing and measuring instruments under section 24;
- (g) all expenses incurred in providing calibration services under Parts V and VI of this Act, and examination of the pattern of any weight, measure weighing or measuring instrument under section 20; and
- (h) all expenses incidental to the proper management and administration of the Measurement Units Standards and Services Department and laboratory.

(4) The Secretary to the Ministry of the Minister shall as soon as possible, after the end of each financial year prepare a report of the administration of the Fund and shall cause to be maintained a full and appropriate account of the Fund in respect of each financial year.

(5) The Auditor-General shall audit the accounts of the Fund in accordance with Article 154 of the Constitution.

(6) The financial year of the Fund shall be the calendar year.

PART VIII

OFFENCES AND PENALTIES

36. Any person who sells or exposes for sale any weight or measure or weighing or measuring instrument which has not been stamped by an inspector with the prescribed mark of verification shall be guilty of an offence and on conviction after summary trial before a Magistrate shall be liable to a fine not exceeding five hundred rupees or imprisonment for a term not exceeding three months or both such fine and imprisonment.

Sale or exposing for sale any unstamped weight etc.

37. Any person who uses for the purposes of any trade or has in his possession for use in any trade, any weight or measure or weighing or measuring instrument which has not, in the period of twelve months immediately preceding such time, been stamped by an inspector with the prescribed mark of verification shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding one thousand rupees or to imprisonment for a period not exceeding six months or to both such fine and imprisonment.

Use and possession of unstamped weights &c.

38. Any person who—

(a) forges or counterfeits any stamp or mark provided under this Act for the use of inspectors in stamping weights or measures or weighing or measuring instruments; or

(b) makes, uses, sells, exposes for sale, utters for sale or keeps in the premises for use in trade or otherwise disposes of any weight or measure or weighing or measuring instrument which is false or which bears any stamp or mark which he knows to be false, forged or counterfeited; or

(c) removes any mark which has been stamped by an Inspector on any weight or measure or weighing or measuring instrument and inserts such mark on any other weight or measure or weighing or measuring instrument; or

(d) increases or diminishes a weight or measure which has been stamped or certified by an inspector under this Act, or tampers with a weighing or measuring instrument stamped or certified by an inspector under this Act or uses, sells, exposes for sale, utters for sale, keeps in his possession for use in a trade or otherwise disposes of any weight or measure which he knows to be diminished or false or a weighing or measuring instrument which he knows to be tampered with,

Forgery of stamp or mark used by inspectors.

shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding ten thousand rupees or to imprisonment for a term not exceeding two years or to both such fine and imprisonment.

Use of
weight or
measure of
length or
capacity.

39. Whoever uses any false weight or false measures of length or capacity, or uses any weight or any measure of length or capacity representing it to be a different weight or measure from what it is, shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be punished with a fine not exceeding five thousand rupees or with imprisonment for a term not exceeding one year, or with both such fine and imprisonment.

Repair or
manufacture
of any
weight or
measure
without being
registered.

40. Any person who, not being registered by the Director under the provisions of section 21, repairs or manufacture any weight, measure or weighing or measuring instrument, shall, be guilty of an offence and shall, on conviction after summary trial before a Magistrate, be liable to a fine not exceeding one thousand rupees or to imprisonment for a term not exceeding six months or to both such fine and imprisonment.

Refusal to
produce
weights &c.
for
inspection.

41. Any person who refuses to produce any weight measure or weighing or measuring instrument when required to do so by an inspector in the exercise of the powers conferred upon him by section 24 shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding two thousand five hundred rupees or to imprisonment for a term not exceeding one year or to both such fine and imprisonment.

False,
incorrect or
untrue
declaration
or statement,
&c.

42. Any person who, in any place or area, by any means whatsoever, whether direct or indirect, makes any false, incorrect or untrue declaration or statement as to the number, quantity, measure, gauge or weight of any goods or things in connection with their purchase, sale, weighing or measurement. or in the computation of any charges for services rendered on the basis of weight or measure, or who sells, or causes to be sold, or delivers or causes to be delivered to a purchaser anything by weight or measure short of the quantity demanded of or represented by the seller, shall be guilty of an offence and shall, on conviction after summary trial before a Magistrate be liable to a fine not exceeding two thousand five hundred rupees or to imprisonment for a term not exceeding six months or to both such fine and imprisonment.

43. Any person who uses for the purpose of any trade or has in his possession for use in any trade, any weight or measure or weighing or measuring instrument which is not correct, shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding two thousand five hundred rupees or to imprisonment for a term not exceeding six months or to both such fine and imprisonment.

Use or possession of any weight or measure which is not correct.

44. Any inspector who commits a breach of any provision of Part IV or of any regulation relating to the examination, verification or stamping of any weight, measure or weighing or measuring instrument shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding two thousand five hundred rupees or to imprisonment for a term not exceeding two years or to both such fine and imprisonment.

Breach by Inspector.

45. Any person who fails to have a measure or measuring instrument calibrated in terms of a directive issued by the Minister under section 30, shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding five thousand rupees or to imprisonment for a term not exceeding two years or to both such fine and imprisonment.

Failure to obey directive issued under section 30.

46. Any person who commits a breach of any provision of this Act or of any regulations made thereunder for which no punishment is expressly provided for shall be guilty of an offence and shall on conviction after summary trial before a Magistrate be liable to a fine not exceeding five hundred rupees.

General offence.

47. Any court may on the conviction of any person of an offence under this Act relating to any weight or measure or weighing or measuring instrument, make order declaring that such weight or measure or weighing or measuring instrument shall be forfeited to the State; and every weight or measure or weighing or measuring instrument which is so forfeited shall be disposed of in such manner as may be prescribed.

Forfeiture of weight or measure.

48. For the purpose of this Act any weight or measure or weighing or measuring instrument which is found in the possession of any person who carries on any trade, or on any premises used by any person for the purposes of any trade, shall, until the contrary is proved, be deemed to be in the possession of that person for use in trade.

Evidence of possession.

Sanction for
prosecution

49. No prosecution shall be instituted against any person for any offence under this Act except by or with the written sanction of the Superintendent of Measurement Units, Standards and Services for the District or area within which such offence is alleged to have been committed.

PART IX

GENERAL

Investigation
by
Assistant
Director and
Superintendent
of
Weights
and
Measures

50. (1) The Director may from time to time direct any Assistant Director of Measurement Units, Standards and Services or any Superintendent of Measurement Units, Standards and Services to hold an inquiry with respect to the administration of this Act in any area in Sri Lanka.

(2) Where any such Assistant Director or any such Superintendent is directed to hold an inquiry under subsection (1) in any area, he shall—

(a) inspect the tertiary standards and the weighing and measuring instruments provided for use by the Inspectors appointed for such area or for any division forming part thereof;

(b) inquire into the procedure observed in the inspection and verification of weights and measures and weighing and measuring instruments in that area; and

(c) make such other investigations as the Director may direct.

(3) For the purpose of any inquiry authorised to be held in any area, the officer who is directed under subsection (1) to hold such inquiry shall and may exercise all the powers conferred on an Inspector by or under this Act.

Declaration
of specified
packaged
goods and
weight
to be
contained
in any
package

51. (1) The Minister may, by Order published in the Gazette declare any goods, to be specified packaged goods (hereinafter referred to as "specified packaged goods") for the purpose of this section.

(2) Where any specified packaged goods are sold by any packer or an importer contained in a package, such packer or importer shall be subject to the provisions of this section.

(3) The Director may, by Notification published in the Gazette, declare in respect of certain specified packaged goods the quantity to be contained in any package and in respect of all other specified packaged goods, the quantity to be contained in a package shall be as decided upon by a packer or an importer as the case may be.

(4) It shall be the duty of any person who is a packer or an importer of any specified packaged goods to ensure that such package is marked in the prescribed manner with—

(a) a statement of the quantity contained in authorised units either of weight or of volume or of length; and

(b) his name and address or a mark which enables his name and address to be readily ascertained by an Inspector.

(5) The Minister shall by regulations, prescribe the methods and tests that should be adopted to determine the correctness of the quantity contained in any package containing any specified packaged goods whether packed in Sri Lanka or imported into Sri Lanka.

(6) Any person who is a packer or an importer of any specified packaged goods—

(a) who packs or imports any specified packaged goods, containing less than the quantity as indicated in the statement on the package; or

(b) fails to mark in authorised units on any package, the quantity it contains,

shall be guilty of an offence and shall on conviction be liable to a fine not exceeding two thousand rupees or imprisonment of either description for a term not exceeding one year or to both such fine and imprisonment.

52. Any person who sells or expose for sale a package containing any specified packaged goods, the quantity of which is not marked on it in authorised units, shall be guilty of an offence under this Act.

Sale of packaged goods not marked in authorised units to be an offence.

Settlement
of disputes.

53. If any dispute arises between an inspector and any other person as to the methods to be adopted in testing any weight or measure or weighing or measuring instrument, such dispute shall, at the request of such inspector or of such other person, be determined by the Director and the decision of the Director shall be final and conclusive.

Certificate of
Director,
Deputy
Director
or an
Assistant
Director
to be
prima
facie
evidence
of facts
stated
therein.

54. A certificate purporting to be issued by the Director, the Deputy Director or an Assistant Director of Measurement Units, Standards and Services regarding the condition of any weight or measure or weighing or measuring instrument examined by him shall, without further proof, be admissible in evidence in any court, and shall be *prima facie* proof of the facts stated therein.

Principal
 liable for
offences of
servants and
agents.

55. Where any offence under this Act is committed by an agent or servant of any manufacturer or trader, such offence shall be deemed to have been committed by such manufacturer or trader unless he proves that such offence was committed without his knowledge.

Offences
committed by
body of
persons.

56. Where an offence under this Act is committed by a body of persons, then—

- (a) if the body of persons is a body corporate, every person who at the time of the commission of that offence was a director, or officer of that body corporate; or
- (b) if the body of persons is a body other than a body corporate, every person who at the time of the commission of the offence was a member of that body,

shall be deemed to be guilty of the offence:

Provided however that such director, officer or member shall not be deemed to be guilty of that offence if he proves that the offence was committed without his knowledge or that he exercised due diligence to prevent the commission of that offence.

Rewards to
certain
persons.

57. Where any person is convicted of any offence under this Act, or where any article is seized and ordered to be forfeited under this Act, the Director may pay—

- (a) to the person or persons who provided the information leading to such conviction or the seizure and forfeiture of such article; and

- (b) to any person who is concerned in the detection of such offence or affecting the seizure and forfeiture of such article,

such reward as he may consider reasonable.

58. (1) Sections 257, 258, 259 and 260 of the Penal Code (Chapter 19) are hereby repealed.

Repeal of
Sections 257,
258, 259 and
260 of
Chapter 19
and savings.

(2) Notwithstanding the repeal of the aforementioned sections, every action or prosecution already instituted and pending under the repealed sections in any court, original or appellate, on the appointed date shall be continued and proceeded with to final judgement under the said repealed sections.

59. (1) The Weights and Measures Ordinance (Chapter 153) is hereby repealed.

Repeal of
Chapter 153
and savings.

(2) Notwithstanding the repeal of the aforesaid Ordinance—

(a) any act or thing done by an inspector before the appointed date shall be deemed for all purposes to have been validly done and shall have effect as though such act or thing was done under the provisions of this Act;

(b) every standard of weight or measure procured and verified under sections 14 and 15 of the repealed Ordinance, shall for all purposes be deemed to be a standard of weight or measure for the purposes of this Act;

(c) every secondary standard of weight or measure verified and authenticated under section 16 of the repealed Ordinance and every working standard authenticated under section 17 of the repealed Ordinance shall, for all purposes be deemed to be a secondary standard or a tertiary standard respectively, for the purposes of this Act; and

(d) every licence issued under section 31 of the repealed Ordinance for the sale, manufacture or repair of any authorized weight or measure or any weighing or measuring instrument shall be deemed to be a licence validly issued under the provisions of this Act.

Regulations.

50. (1) The Minister may make regulations for matters required by the Act to be prescribed and for matters in respect of which regulations are authorized by this Act to be made.

(2) In particular and without prejudice to the generality of the powers conferred by subsection (1), the Minister may make regulations in respect of all or any of the following matters:--

(a) the tests required to be passed by any person in order to be appointed as an inspector under subsection (3) of section 14;

(b) the custody and preservation of the Sri Lanka standards, reference standards, secondary and tertiary standards;

(c) the manner in which reference standards, secondary and tertiary standards shall be authenticated and verified;

(d) the specifications for tertiary standards and the manner in which such standards shall be kept and preserved;

(e) the procedure for the examination and stamping of secondary and tertiary standards, and the periodical verification of weighing and measuring instruments provided for use by inspectors;

(f) the requirements as to the composition, form and specification of weights, measures and weighing and measuring instruments and the prohibition of the manufacture or use of weights, measures and weighing and measuring instruments which do not conform to such requirements;

(g) the inspection, verification and stamping by inspectors of weights, measures and weighing and measuring instruments, the tests to be applied for the purpose of ascertaining the accuracy and efficiency of weights and measures, the form and design of stamps to be used by inspectors, the manner in which such stamps shall be used and the circumstances in which such stamping shall be prohibited;

- (a) the limits of error to be allowed on verification and to be tolerated on inspection and on patterns approval of weights, measure and weighing and measuring instruments, either generally or as respects any trade;
- (b) the rules, tests, procedures and tolerances permitted in respect of packaged goods, the net content of which are marked by length, volume or weight;
- (c) physical constants and their corresponding numerical values that should be used for all purposes;
- (d) methods of determination of the value of such attributes of colour and hardness used for industrial purposes;
- (e) the circumstances and conditions under which the persons by whom and the manner in which marks of verifications may be obliterated or defaced;
- (f) the fees to be charged by inspectors for the examination, verification of weights, measures and weighing and measuring instruments and the cost of verification and examination;
- (g) the manner in which the methods for calibrating different instruments should be determined and established; and
- (h) all matters incidental to or connected with the matters or subjects specifically referred to in this subsection.

(3) Every regulation made by the Minister shall be published in the Gazette and shall come into operation on the date of such publication or on such later date as may be specified in the regulation.

(4) Every regulation made by the Minister shall as soon as convenient after its publication in the Gazette, be brought before Parliament for its approval. Every regulation which is not so approved shall be deemed to be rescinded as from the date of such disapproval but without prejudice to anything previously done thereunder.

61. (1) In this Act unless the context otherwise requires—

“measure” means a vessel of determinate capacity for determining the volume of a liquid or the length of a graduated rod or line;

“measuring instrument” means any instrument used for the measurement of length, area, volume or capacity or any instrument for the measurement of any quantity;

Interpre-
tation

"tertiary standard" means a standard procured under section 9 with the specification of accuracy prescribed for such standard and used by an inspector;

"trade" means any transaction, contract, sale, bargain or dealing referred to in section 12;

"unit of measurement" means any unit of measurement as set out in the First and Second Schedules;

"weight" means a body of determinate mass for use with a weighing instrument; and

"weighing instrument" means an instrument for the measurement of mass or weight.

(2) For the purpose of this Act a weight or measure shall be deemed to be correct—

(a) upon verification, if it is in accordance with a tertiary standard of that weight or measure or has not a greater limit of error than the prescribed limit of error to be allowed on verification; or

(b) upon inspection, if it is in accordance with a tertiary standard of that weight or measure or has not a greater limit of error than the prescribed limit of error to be tolerated on inspection; or

(c) for the purpose of determining whether an offence has been committed under section 45, the limit of error should not exceed twice the limit of error allowed on inspection.

(3) For the purpose of this Act a weighing or measuring instrument shall be deemed to be correct—

(a) upon verification, if it has not a greater limit of error than the prescribed limit of error to be allowed on verification; or

(b) upon inspection, if it has not a greater limit of error than the prescribed limit of error to be tolerated on inspection; or

(c) for the purpose of determining whether an offence has been committed under section 45 the limit of error should not exceed twice the limit of error allowed on inspection.

12. In the event of any inconsistency between the Sinhala and Tamil texts of this Act the Sinhala text shall prevail.

FIRST SCHEDULE

DEFINITIONS

PART I

The base units of the International System and their Symbols are—

the metre—symbol: m	— for length
the kilogramme—symbol: kg	— for mass or weight
the second—symbol: s	— for time
the ampere—symbol: A	— for intensity of electric current
the kelvin—symbol: K	— for thermodynamic temperature
the candela—symbol: cd	— for luminous intensity
the mole—symbol: mol	— for amount of substance

Definitions of the base units—

1.1. The unit of length is the 'metre' (m). The metre is the length of the path travelled by light in vacuum during a time interval of $1/299\,792\,458$ of a second. (17th C.G.P.M. 1983)

1.2. The unit of mass is the 'kilogramme' (kg). The kilogramme is the unit of mass, it is equal to the mass of the international prototype of the kilogramme. (1st and 3rd C.G.P.M. 1889 and 1901).

1.3. The unit of time is the 'second' (s). The second is the duration of $9\,192\,631\,770$ periods of radiation corresponding to the transition between the two hyperfine levels of the ground state of the Caesium—133 atom. (13th C.G.P.M. (1967) Resolution 1).

1.4. The unit of intensity of electric current is the 'ampere' (A). The ampere is that constant current which, if maintained in two straight parallel conductors of infinite length, of negligible circular cross-section, and placed 1 metre apart in vacuum, would produce between these conductors a force equal to 2×10^{-7} newtons per metre of length. (C.I.P.M. (1946), Resolution 5 approved by the 9th C.G.P.M. (1948).

1.5. The thermodynamic unit of temperature is the 'kelvin' (K). The kelvin, unit of thermodynamic temperature, is the fraction $1/273.16$ of the thermodynamic temperature of the triple point of water. (13th C.G.P.M. (1967), Resolution 4). The kelvin is also used to express intervals of temperature.

1.6. The unit of luminous intensity is the 'candela' (cd). The candela is the luminous intensity, in a given direction of a source that emits monochromatic radiation of frequency 540×10^{12} Hertz and of which the radiant intensity in that direction is $1/683$ watts per steradian.

1.7 The unit of the amount of substance is the 'mole' (mol).—The mole is the amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilograms of carbon 12.

Note : (1) When the mole is used, the elementary entities must be specified and may be atoms, molecules, ions, electrons, other particles, or specified groups of such particles. (14th C.G.P.M. 1971)

(2) (a) The meanings of the terms used in these definitions will be those that are assigned to them in Physics.

(b) C.G.P.M. stands for the General Conference of Weights and Measures.

PART II

The supplementary units, their symbols and definitions

2. The supplementary units are.—

The radian—(symbol-rad)-for plane angle.

The steradian—(symbol-sr)-for solid angle.

2.1. Units of plane angle.—

The unit of plane angle shall be the radian (symbol-rad).

The radian is the plane angle between two radii of a circle which cut off on the circumference an arc equal in length to the radius.

2.2. Unit of solid angle.—

The unit of solid angle shall be the steradian (symbol-sr).

The steradian is the solid angle, which having its vertex in the centre of a sphere, cuts off an area of the surface of sphere equal to that of a square with its sides of equal length to the radius of the sphere.

PART III

3. The derived units, their symbols and definitions.—

(A) Derived units in relation to space and time.

3.1. Unit of wave number.—

Wave number : 1 per metre (symbol-m⁻¹) 1 per metre is the wave number of a monochromatic radiation whose wave length is equal to 1 metre.

$$(1\text{m}^{-1} = \frac{1}{1\text{m}})$$

3.2. Unit of surface area.—

Surface area—the square metre (symbol-m²) The square metre is the surface of a square having a side of 1 metre

$$(1\text{m}^2 = 1\text{m} \cdot 1\text{m})$$

2.3. Unit of volume.—

Volume—the cubic metre (symbol: m³) The cubic metre is the volume of a cube having a side of 1 metre.

$$(1 \text{ m}^3 = 1 \text{ m. lra. lra})$$

2.4. Unit of frequency.—

Frequency: the Hertz (symbol: Hz) The Hertz is the frequency of a periodic phenomenon of which the periodic time is 1 second.

$$(1 \text{ Hz} = 1 \text{ s}^{-1} = \frac{1}{1 \text{ s}})$$

2.5. Unit of angular velocity.—

Angular velocity: radian per second (symbol: rad/s or rad. s⁻¹)

The radian per second is the angular velocity of a body which, animated by a uniform rotation around a fixed axis, turns 1 radian in 1 second.

$$(1 \text{ rad/s} = \frac{1 \text{ rad}}{1 \text{ s}})$$

2.6. Unit of angular acceleration.—

Angular acceleration: radian per second squared (symbol rad/s² or rad. s⁻²).

The radian per second squared is the angular acceleration of a body which is animated by a rotation varying uniformly around a fixe axis, and whose angular velocity varies 1 radian per second in 1 second.

$$(1 \text{ rad/s}^2 = \frac{1 \text{ rad/s}}{1 \text{ s}})$$

2.7. Unit of speed.—

Speed—metre per second (symbol: m/s or m.s.⁻¹). The metre per second is the speed of a body which, animated by a uniform movement, covers 1 metre in 1 second.

$$(1 \text{ m/s} = \frac{1 \text{ m}}{1 \text{ s}})$$

2.8. Unit of acceleration.—

Acceleration—metre per second squared (symbol—m/s² or m.s.⁻²)

The metre per second squared is the acceleration of a body, which animated by a uniformly varied movement whose speed varies in 1 second by 1 metre per second.

$$(1 \text{ m/s}^2 = \frac{1 \text{ m/s}}{1 \text{ s}})$$

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8.9. Unit of rotational frequency.—

Rotational frequency—Second raised to the power minus one (symbol : s⁻¹).

The second raised to the power minus one is the rotational frequency of a uniform rotatory movement which produces one complete revolution in one second.

$$(1 \text{ s}^{-1} = \frac{1}{1 \text{ s}})$$

Note : This unit is also called, revolution per second.

8.10. Unit of vergency of optical system.—

Vergence of optical system—diopetre (symbol : m⁻¹). The diopetre is the vergency of an optical system, the focal distance of which is one metre in a medium having a refractive index of unity.

$$(1 \text{ m}^{-1} = \frac{1}{1 \text{ m}})$$

(B) The derived units in relation to mechanics.

8.11. Unit of linear density.—

Linear density—kilogramme per metre (symbol : kg/m or kg.m⁻¹). The kilogramme per metre is the linear density of a homogeneous body of uniform section having a mass of 1 kilogramme and a length of 1 metre.

$$(1 \text{ kg/m} = \frac{1 \text{ kg}}{1 \text{ m}})$$

8.12. Unit of surface density.—

Surface density—kilogramme per square metre (symbol—kg/m² or kg. m⁻²). The kilogramme per square metre is the surface density of a homogeneous body of uniform thickness having a mass of 1 kilogramme and an area of 1 square metre.

$$(1 \text{ kg/m}^2 = \frac{1 \text{ kg}}{1 \text{ m}^2})$$

8.13. Unit of density.—

Density (mass density)—kilogramme per cubic metre (symbol—kg/m³ or kg. m⁻³). The kilogramme per cubic metre is the density of a homogeneous body having a mass of 1 kilogramme and a volume of 1 cubic metre.

$$(1 \text{ kg/m}^3 = \frac{1 \text{ kg}}{1 \text{ m}^3})$$

3.14. Units of concentration.—

Concentration—kilogramme per cubic metre (symbol—kg/m³ or kg. m⁻³). The kilogramme per cubic metre is the concentration of a homogeneous solution having a total volume of one cubic metre and containing a mass of one kilogramme of a given substance.

$$(1 \text{ kg/m}^3 = \frac{1 \text{ kg}}{1 \text{ m}^3})$$

3.15. Unit of force.—

Force—newton (symbol: N). The newton is the force which, when applied to a body having a mass of 1 kilogramme, gives it an acceleration of 1 metre per second squared.

$$(1 \text{ N} = 1 \text{ kg} \cdot 1 \text{ m/s}^2)$$

3.16. Unit of moment of force.—

Moment of force—newton metre (symbol: N.m). The newton metre is the moment of force produced in a body by a force of one newton acting at a perpendicular distance of one metre from the fixed axis around which the body turns.

$$(1 \text{ N.m.} = 1 \text{ N} \cdot 1 \text{ m})$$

3.17. Unit of pressure.—

Pressure, Stress—pascal (symbol—Pa). The pascal is the uniform pressure which, when acting on a plane surface of 1 square metre, exercises perpendicularly to that surface a total force of 1 newton. It is also the stress which, when acting on a plane surface of 1 square metre, exercises on that surface a total force of 1 newton.

$$(1 \text{ Pa} = \frac{1 \text{ N}}{1 \text{ m}^2})$$

3.18. Unit of dynamic viscosity.—

Dynamic Viscosity—pascal second (symbol: Pa.s). The pascal second is the dynamic viscosity of a homogeneous fluid in which the uniform linear movement of a plane surface of 1 square metre leads to a retarding force of 1 newton, when there is a difference in velocity between two parallel planes separated by a distance of 1 metre.

$$(1 \text{ Pa} \cdot \text{s} = \frac{1 \text{ Pa} \cdot 1 \text{ m}}{1 \text{ m/s}})$$

3.19. Unit of kinematic viscosity.—

Kinematic viscosity—square metre per second (symbol—m²/s or m². s⁻¹). The metre squared per second is the kinematic viscosity of a fluid whose dynamic viscosity is 1 pascal second and whose density is 1 kilogramme per cubic metre.

$$(1 \text{ m}^2/\text{s} = \frac{1 \text{ Pa} \cdot \text{s}}{1 \text{ kg/m}^3})$$

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3.20. Unit of surface tension.—

Surface tension—Newton per metre (symbol—N/m or $N \cdot m^{-1}$). The newton per metre is the surface tension produced when a force of one newton acts over a length of one metre on the surface of liquid separating that liquid from the material surrounding it.

$$(1 \text{ N/m} = \frac{1 \text{ N}}{1 \text{ m}})$$

3.21. Unit of work, energy, quantity of heat.—

Work, energy, quantity of heat—Joule (symbol—J). The joule is the work done when the point of application of a force of 1 newton is displaced through a distance of 1 metre in the direction of the force.

$$(1 \text{ J} = 1 \text{ N} \cdot 1 \text{ m})$$

3.22. Unit of power, energy flow rate, heat flow rate.—

Power, energy flow rate, heat flow rate—Watt (symbol—W). The watt is the power which gives rise to a production of energy equal to 1 joule per second.

$$(1 \text{ W} = \frac{1 \text{ J}}{1 \text{ s}})$$

3.23. Unit of volume flow rate.—

Volume flow rate—cubic metre per second (symbol— m^3/s or $m^3 \cdot s^{-1}$). The cubic metre per second is the volume flow rate of a uniform flow such that a substance having a volume of 1 cubic metre passes through the cross section considered in 1 second.

$$(1 \text{ m}^3/\text{s} = \frac{1 \text{ m}^3}{1 \text{ s}})$$

3.24. Unit of mass flow rate.—

Mass flow rate—kilogramme per second (symbol—kg/s or $kg \cdot s^{-1}$). The kilogramme per second is the mass flow rate of a uniform flow such that a substance having a mass of 1 kilogramme passes through the cross section considered in 1 second.

$$(1 \text{ kg/s} = \frac{1 \text{ kg}}{1 \text{ s}})$$

3.25. Unit of specific volume.—

Specific volume—cubic metre per kilogramme (symbol— m^3/kg or $m^3 \cdot kg^{-1}$). The cubic metre per kilogramme is the specific volume of a homogeneous body having a volume of one cubic metre and a mass of one kilogramme.

$$(1 \text{ m}^3/\text{kg} = \frac{1 \text{ m}^3}{1 \text{ kg}})$$

(c) the derived units in relation to heat.

3.28. Units of entropy.—

Entropy.—Joule per kelvin (symbol— J/K or $J.K^{-1}$). The joule per kelvin is the increase in the entropy of a system receiving a quantity of heat of 1 joule at the constant thermodynamic temperature of 1 kelvin provided that no irreversible change takes place in the system.

$$(1 J/K = \frac{1 J}{1 K})$$

3.29. Units of specific entropy.—

Specific entropy.—joule per kilogramme kelvin (symbol— $J/kg K$ or $J.kg^{-1} K^{-1}$). The joule per kilogramme kelvin is the specific entropy of a system of homogeneous mass of 1 kilogramme receiving a quantity of heat equal to one joule at the constant thermodynamic temperature of one kelvin, provided that no irreversible change takes place in the system.

$$(1 J/kg.K = \frac{1 J}{1 kg. 1 K})$$

3.30. Unit of heat capacity.—

Heat capacity.—joule per kelvin (symbol— J/K or $J.K^{-1}$). The joule per kelvin is the heat capacity of a homogeneous body in which a quantity of heat equal to one joule produces an increase of one kelvin in the thermodynamic temperature.

$$(1 J/K = \frac{1 J}{1 K})$$

3.31. Unit of specific heat capacity.—

Specific heat capacity.—joule per kilogramme kelvin (symbol— $J/kg.K$ or $J.kg^{-1}.K^{-1}$). The joule per kilogramme kelvin is the specific heat capacity of a homogeneous body having a mass of 1 kilogramme in which the addition of a quantity of heat of 1 joule produces a rise in temperature of 1 kelvin.

$$(1 J/kg.K = \frac{1 J}{1 kg. 1 K})$$

3.32. Unit of latent heat.—

Latent heat.—joule per kilogramme (symbol— J/kg or $J.kg^{-1}$). The joule per kilogramme is the heat exchanged by 1 kg of substance to change one phase to another at the temperature of its changing phase.

$$(1 J/kg = \frac{1 J}{1 kg})$$

3.31. Unit of thermal conductivity.—

Thermal conductivity—watt per metre kelvin (symbol—W/m K or $W \cdot m^{-1} K^{-1}$). The watt per metre kelvin is the thermal conductivity of a homogeneous body in which a difference of temperature of 1 kelvin produces a heat flow rate of 1 watt between two parallel planes having a surface of 1 square meter which are 1 meter apart.

$$(1 \text{ W/m.K.} = \frac{1 \text{ W/m}}{1 \text{ K/1 m}})$$

(D) The derived units in relation to electricity and magnetism.**3.32. Units of quantity of electricity.**

Quantity of electricity, Electric charge: Coulomb (symbol—C). The coulomb is the quantity of electricity carried in 1 second by current of 1 ampere.

$$(1 \text{ C} = 1 \text{ A} \cdot 1 \text{ s} = 1 \text{ A.s.})$$

3.33. Unit of electric potential, electric tension, electromotive force.—

Electric potential, Electric tension, Electromotive force—volt (symbol—V). The volt is the difference of electric potential between two points of a conducting wire carrying a constant current of 1 ampere, when the power dissipated between these two points is equal to 1 watt.

$$(1 \text{ V} = \frac{1 \text{ W}}{1 \text{ A}})$$

3.34. Unit of electric field strength.—

Electric field strength—volt per meter (Symbol—V/m). The volt per meter is the strength of the electric field which exercises a force of a newton on a body charged with a quantity of electricity of 1 coulomb.

$$(1 \text{ V/m} = \frac{1 \text{ N}}{1 \text{ C}})$$

3.35. Unit of electric charge density.—

Electric charge density—coulomb per cubic metre (symbol—C/m³ or C.m⁻³). The coulomb per cubic metre is the electric charge density of a homogeneous mass or system of volume of one cubic metre and having a charge of one coulomb.

$$(1 \text{ C/m}^3 = \frac{1 \text{ C}}{1 \text{ m}^3})$$

8.36. Unit of electric flux density.—

Electric flux density—coulomb per square metre (symbol— C/m^2 or $C.m^{-2}$). The coulomb per square metre is the electric flux density when a condenser, having plates of infinite length parallel to each other, is charged, in vacuum with a quantity of electricity equal to one coulomb per one square metre of area of the plate.

$$(1 C/m^2 = \frac{1C}{1 m^2})$$

8.37. Unit of electric resistance.—

Electric resistance—ohm (symbol— Ω). The ohm is the electric resistance between two points of a conductor when a constant potential difference of 1 volt, applied to these points, produces in the conductor a current of 1 ampere, (the conductor not being the source of any electromotive force).

$$(1 \Omega = \frac{1V}{1A})$$

8.38. Unit of conductance.—

Conductance—siemens (symbol— S). The siemens is the conductance of a conductor having an electric resistance of 1 ohm.

$$(1S = 1 \Omega^{-1} = \frac{1}{1\Omega})$$

8.39. Unit of electric capacitance.—

Electric capacitance—farad (symbol— F). The farad is the capacitance of a capacitor between the plates of which there appears a difference of electric potential of 1 volt, when it is charged by a quantity of electricity of 1 coulomb.

$$(1 F = \frac{1C}{1V})$$

8.40. Unit of permittivity.—

Permittivity—farad per metre (symbol— F/m or $F.m^{-1}$). The farad per metre is the permittivity of the medium which give a capacitance of one farad per square metre of area of two parallel plates separated by a distance of one metre.

$$(1 F/m = \frac{1F}{1m})$$

3.11. Unit of Inductance.—

Inductance—henry (symbol—H). The henry is the electric inductance of a closed circuit in which an electromotive force of a volt is produced when the electric current in the circuit varies uniformly at the rate of 1 ampere per second.

$$1 \text{ H} = \frac{1 \text{ V} \cdot 1 \text{ s}}{1 \text{ A}}$$

3.12. Unit of Permeability.—

Permeability—henry per metre (symbol—H/m or $\text{H} \cdot \text{m}^{-1}$). The henry per metre is the permeability of a material surrounded by a single turn of a flat sheet conductor including an area of one square metre and length one metre which gives an inductance of one henry.

$$1 \text{ H/m} = \frac{1 \text{ H}}{1 \text{ m}}$$

3.13. Unit of Magnetic flux.—

Magnetic flux, Magnetic induction flux—weber (symbol—Wb). The weber is the magnetic flux which linking a circuit of 1 turn would produce in it an electromotive force of 1 volt, if it were reduced to zero at a uniform rate in 1 second.

$$1 \text{ Wb} = 1 \text{ V} \cdot 1 \text{ s}$$

3.14. Unit of magnetic induction.—

Magnetic induction, Magnetic flux density : tesla (symbol—T). The tesla is the uniform magnetic induction which, distributed normally over a surface of 1 square metre, produces across the surface a total magnetic flux of 1 weber.

$$1 \text{ T} = \frac{1 \text{ Wb}}{1 \text{ m}^2}$$

3.15. Unit of magnetomotive force.—

Magnetomotive force—ampere (symbol—A). The ampere is the magnetomotive force along any closed curve which surrounds, once only, an electric conductor through which an electric current of 1 ampere passes.

3.16. Unit of magnetic field strength.—

Magnetic field strength—ampere per metre (symbol—A/m or $\text{A} \cdot \text{m}^{-1}$). The ampere per metre is the strength of the magnetic field produced in vacuum along the circumference of a circle of 1 metre circumference, by an electric current of 1 ampere, maintained in a straight conductor of infinite length of negligible circular cross section, forming the axis of the circle mentioned.

$$1 \text{ A/m} = \frac{1 \text{ A}}{1 \text{ m}}$$

3.47 Unit of current density.—

Current density—ampere per square metre (symbol— A/m^2 or $A.m^{-2}$). The ampere per square metre is the current density in a linear conductor when a current of intensity one ampere flows uniformly through a cross-section of the conductor equal to one square metre, perpendicular to the direction of flow of the current.

$$(1A/m^2 = \frac{1A}{1m^2})$$

(E) The derived units in relation to electromagnetic radiation and light.

3.48. Unit of radiant intensity.—

Radiant intensity—watt per steradian (symbol— W/sr or $W.sr^{-1}$). The watt per steradian is the radiant intensity of a point source sending uniformly a radiant flux of 1 watt in a solid angle of 1 steradian.

$$(1W/sr = \frac{1W}{1sr})$$

3.49. Unit of irradiance.—

Irradiance : watt per square metre (symbol - W/m^2 or $W.m^{-2}$)
The watt per square metre is the irradiance produced by radiant flux of one watt, distributed uniformly over an element having a surface of one square metre, and containing the point source.

$$(W/m^2 = \frac{1W}{1m^2})$$

3.50. Unit of radiance.—

Radiance—watt per square metre steradian (symbol— $W/m^2.sr$ or $W.m^{-2}.sr^{-1}$). The watt per square metre steradian is the radiance of a source radiating one watt per steradian per square metre of projected area.

$$(1W/m^2.sr = \frac{1W}{1m^2.1sr})$$

3.51. Unit of luminance.—

Luminance—candela per square metre (symbol— cd/m^2 or $cd.m^{-2}$)
The candela per square metre is the luminance perpendicular to the plane surface of 1 square metre of a source of which the luminous intensity perpendicular to that surface is 1 candela.

$$1cd/m^2 = \frac{1cd}{1m^2}$$

3.52 unit of luminous flux.—

Luminous flux—lumen (symbol— lm). The lumen is the luminous flux emitted in the solid angle of 1 steradian by a uniform point source having a luminous intensity of 1 candela.

$$(1lm = 1cd.1sr)$$

3.53. Unit of illuminance.—

Illuminance—lux (symbol—lx). The lux is the illuminance of a surface receiving a luminous flux of 1 lumen, uniformly distributed over 1 square metre of the surface.

$$(1 \text{ lx} = \frac{1 \text{ lm}}{1 \text{ m}^2})$$

(F) The derived units in relation to ionizing radiation.

3.54. Unit of activity (of a radio active source).—

Activity (of a radioactive source)—becquerel (symbol—Bq). The becquerel is the activity of a radioactive source in which a nucleus transformation or transition occurs per second.

$$(1 \text{ Bq} = \frac{1}{\text{ls}})$$

3.55. Unit of absorbed dose.—

Absorbed dose—gray (symbol—Gy). The gray is the dose absorbed in an element of matter of 1 kilogram mass to which the energy of 1 joule is communicated by ionizing radiations whose energy fluence is constant.

$$(1 \text{ Gy} = \frac{1 \text{ J}}{1 \text{ kg}})$$

3.56. Unit of Exposure.—

Exposure—Coulomb per kilogramme (symbol—C/kg or C.kg⁻¹). The coulomb per kilogramme is the exposure of a photonic ionizing radiation which can produce in a quantity of air of 1 kilogramme mass, ions of one sign carrying a total electric charge of 1 coulomb, the energy fluence being uniform in the quantity of air considered.

$$(1 \text{ C/kg} = \frac{1 \text{ C}}{1 \text{ kg}})$$

(G) The derived units in relation to Physical Chemistry and Molecular Physics.

3.57. Unit of Concentration (of amount of substance).—

Concentration (of amount of substance)—mole per cubic metre (symbol mol/m³ or mol.m⁻³). The mole per cubic metre is the concentration of a homogeneous solution having a total volume of one cubic metre and containing one mole of the given substance.

$$(1 \text{ mol/m}^3 = \frac{1 \text{ mol}}{1 \text{ m}^3})$$

3.58. Unit of Molar Energy.—

Molar energy : joule per mole (symbol—J/mol or J.mol⁻¹). The joule per mole is the molar energy of one mole of substance having the energy of one joule.

$$(1 \text{ J/mol} = \frac{1 \text{ J}}{1 \text{ mol}})$$

1.53. Unit of Molar Entropy.—

Molar entropy—joule per mole kelvin (symbol—J/mol, K or J. mol⁻¹. K⁻¹.) The joule per mole kelvin is the molar entropy of a system of homogeneous mass having a substance equal to one mole receiving a quantity of heat equal to one joule at the constant thermodynamic temperature of one kelvin, provided that no irreversible change takes place in the system.

$$(1 \text{ J/mol. K} = \frac{1 \text{ J}}{1 \text{ mol. 1 K}})$$

PART IV

NAMES, MAGNITUDES AND SYMBOLS OF SI PREFIXES AND PRINCIPLES OF USE OF SI PREFIXES

4.1. The decimal multiples and sub-multiples of SI units are formed by means of the decimal numerical factors set out in the following article, by which the SI unit concerned is multiplied.

4.2. The names of the decimal multiples and sub-multiples of the SI units are formed by means of SI prefixes designating the decimal numerical factors.

Factors	Prefix SI	Symbol
1 000 000 000 000 000 000 = 10 ¹⁸	.. exa	.. E
1 000 000 000 000 000 = 10 ¹⁵	.. peta	.. P
1 000 000 000 000 = 10 ¹²	.. tera	.. T
1 000 000 000 = 10 ⁹	.. giga	.. G
1 000 000 = 10 ⁶	.. mega	.. M
1 000 = 10 ³	.. kilo	.. k
100 = 10 ²	.. hecto	.. h
10 = 10 ¹	.. deca	.. da
0.1 = 10 ⁻¹	.. deci	.. d
0.01 = 10 ⁻²	.. centi	.. c
0.001 = 10 ⁻³	.. milli	.. m
0.000 001 = 10 ⁻⁶	.. micro	.. μ
0.000 000 001 = 10 ⁻⁹	.. nano	.. n
0.000 000 000 001 = 10 ⁻¹²	.. pico	.. p
0.000 000 000 000 001 = 10 ⁻¹⁵	.. femto	.. f
0.000 000 000 000 000 001 = 10 ⁻¹⁸	.. atto	.. a

4.3. A prefix is considered to be combined with the name of the unit to which it is directly attached.

4.4. The symbol of the prefix must be placed before the symbol of the unit without intermediate space; the whole forms the symbol of the multiple or sub-multiple of the unit. The symbol of the prefix is therefore considered to be combined with the symbol of the unit to which it is directly attached, forming with it a new unit symbol which can be raised to a positive or negative power and which can be combined with other unit symbols to form the symbol for compound units.

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4.5. Compound prefixes, formed by the juxtaposition of several SI prefixes, are not allowed.

4.6. The names and symbols of the decimal multiples and sub-multiples of the unit of mass are formed by the addition of the SI prefixes to the word 'gramme'. The gramme (symbol—g) = 0.001 kg = 10^{-3} kg.

4.7. To designate the decimal multiples and sub-multiples of a derived unit which is expressed in the form of a fraction a prefix can be attached indifferently to the units which appear either in the numerator, or in the denominator, or in both of these terms.

PART V

Units permitted to be used with base, supplementary or derived units

5.1. Permitted units of time.—

(A) *Permitted units in relation to time—*

- (i) minute (symbol—min) The minute is equal to 60 seconds
- (ii) hour (symbol—h) The hour is equal to 3,600 seconds.
- (iii) day (symbol—d) The day is equal to 86 400 seconds or 24 hours,
- (iv) week, month and year of the Gregorian calendar.

5.2. Permitted units of plane angle.—

(B) *Permitted units in relation to plane angle—*

- (i) revolution (turn) One revolution is equal to 2π radians
- (ii) degree (symbol—°) The degree is equal to $\frac{\pi}{180}$ radians
- (iii) minute (symbol—') The minute is equal to $\frac{\pi}{10\ 800}$ radians or $(\frac{1}{60})^\circ$
- (iv) Second (Symbol —'') The second is equal to $\frac{\pi}{648\ 000}$ radians or $(\frac{1}{60})'$

5.3. Permitted units of volume.—

(C) *Permitted units in relation to volume—*

- (i) litre (symbol—L or l). The litre is equal to one thousandth part of a cubic metre.

5.4. Permitted units of mass or weight—

(D) *Permitted units in relation to mass or weight —*

- (i) tonne (symbol—t). The multiples of the tonne formed with 'kilo', 'mega', 'giga' and 'tera'. The tonne is equal to 1 000 kilograms.

(ii) atomic mass unit (symbol—U). The atomic mass unit is equal to the fraction $1/12$ of the mass of an atom of the nuclide ^{12}C . $1\text{ U} = 1.66057 \times 10^{-27}\text{ kg}$ (approximately). Its use is authorised only in Chemistry and Physics.

(iii) metric carat (symbol—CM). The metric carat is equal to 0.0002 kilogrammes. Its use is authorised only for indicating the mass of precious stones.

5.5. Permitted unit of Linear density of textiles.—

(E) Permitted units in relation to linear density of fibres and textiles.—

(i) tex (symbol—tex). The multiples and sub-multiples of the tex is according to part IV of the first Schedule.

tex is equal to 10^{-6} kilogrammes per metre.

5.6. Permitted units of area.—

(F) Permitted units in relation to area.—

(i) hectare (symbol—ha). The hectare is equal to 10 000 square metres. Its use is authorised only in measurement of land area.

5.7. Permitted units of pressure.—

(G) Permitted units in relation to pressure.—

(i) bar (symbol—bar). The bar is equal to 100 000 pascals. Its use is authorised only for pressure of fluid.

(ii) standard atmosphere (symbol—atm). The standard atmosphere is the pressure exerted by air at mean sea level under the standard conditions specified by the General Conference on Weights and Measures. Standard atmosphere is equal to 101 325 pascals.

(iii) millimetre of mercury (symbol—mmHg). The millimetre of mercury is equal to a pressure of 133.322 pascals.

5.8. Permitted units of energy, work and heat.—

(H) Permitted unit in relation to energy, work and quantity of heat.—

(i) electron volt (symbol—eV). The electron volt is the energy gained by an electron in passing through a potential difference of one volt in vacuum.

$1\text{ eV} = 1.60219 \times 10^{-19}\text{ J}$ (approximately)

(ii) watt hour (symbol—Wh). The watt hour is equal to 3.6×10^6 joules.

5.9. Permitted units of temperature.—

(I) Permitted unit in relation to temperature.—

(i) degree celsius (symbol—°C). The degree celsius is the non-official practical temperature scale in which its zero on the degree thermodynamical temperature scale is 273.15 K. The degree celsius = The degree kelvin

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SECOND SCHEDULE

PART I

1. The following units of measurement may be used only in the field of mechanical engineering.

1.1. The measurement of length.

The inch (symbol—in or ")

The inch is equal to 0.025 4 metre exactly.

1.2. The measurement of mass.

The pound (symbol—lb)

The pound is equal to 0.453 542 57 kilogramme exactly.

PART II

2. The following units of measurement may be used only in the field of civil or marine navigation.

2.1. The measurement of length or distance.

The nautical mile

The nautical mile is equal to a distance of 1852 metres

2.2. The measurement of velocity.

The knot

The knot is the velocity which is equal to a velocity of one nautical mile an hour

THIRD SCHEDULE

PART I

Units of measurement for trade

1.1. Measurement of Length

Kilometre (symbol — km) = 1000 m

metre (symbol — m)

Decimetre (symbol — dm) = $\frac{1}{10}$ m

centimetre (symbol — cm) = $\frac{1}{100}$ m

Millimetre (symbol — mm) = $\frac{1}{1000}$ m

micrometre (symbol — μ m) = $\frac{1}{1\ 000\ 000}$ m

1.2. Measurement of Area

square kilometre (symbol — km ²)	=	1000 000 m ²
square metre (symbol — m ²)		
square decimetre (symbol — dm ²)	=	$\frac{1}{100}$ m ²
square centimetre (symbol — cm ²)	=	$\frac{1}{10\ 000}$ m ²
square millimetre (symbol — mm ²)	=	$\frac{1}{1\ 000\ 000}$ m ²
hectare (symbol — ha)	=	10 000 m ²

1.3. Measurement of Volume or Capacity

cubic metre (symbol — m ³)		
cubic decimetre (symbol — dm ³)	=	$\frac{1}{1000}$ m ³
cubic centimetre (symbol — cm ³)	=	$\frac{1}{1\ 000\ 000}$ m ³
cubic millimetre (symbol — mm ³)	=	$\frac{1}{1\ 000\ 000\ 000}$ m ³
hectolitre (symbol — hl or hL)	=	$\frac{1}{10}$ m ³
litre (symbol — L or l)	=	$\frac{1}{1000}$ m ³
decalitre (symbol — dL or dl)	=	$\frac{1}{10\ 000}$ m ³
centilitre (symbol — cL or cl)	=	$\frac{1}{100\ 000}$ m ³
millilitre (symbol — mL or ml)	=	$\frac{1}{1\ 000\ 000}$ m ³

1.4. Measurement of mass or weight—

Metric tonne (symbol—t)	=	1000kg
kilogramme (symbol—kg)		
gramme (symbol—g)	=	$\frac{1}{1000}$ kg

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$$\text{milligramme (symbol—mg)} = \frac{1}{1000\ 000} \text{kg}$$

$$\text{microgramme (symbol—}\mu\text{g)} = \frac{1}{1000\ 000\ 000} \text{kg}$$

$$\text{metric carat (symbol—CM or ct)} = \frac{1}{5000} \text{kg}$$

1.5. Measurement of Density—

The tonne per cubic metre (symbol— t/m^3 or t.m^{-3}) = 1000 kg/m³

The kilogramme per litre (symbol—kg/L or kg.L⁻¹) = 1000 kg/m³

The kilogramme per cubic metre (symbol—kg/m³ or kg.m⁻³)

The gramme per millilitre (symbol—g/mL or g.mL⁻¹) = 1000 kg/m³

The gramme per litre (symbol—g/L or g.L⁻¹) = 1 kg/m³

1.6. Measurement of Linear density of textiles—

milligramme per kilometre (symbol—mg/km) = millitex
(symbol : mtex)

decigramme per kilometre (symbol—dg/km) = decitex
(symbol : dtex)

gramme per kilometre (symbol—g/km) = tex (symbol : tex) = 1 g/km

kilogramme per kilometre (symbol—kg/km) = kilotex
(symbol : ktex) = 1 kg/km

1.7. Measurement of Pressure—

megapascal (symbol—MPa) = 1000 000 Pa

kilopascal (symbol—kPa) = 1000 Pa

Pascal (symbol—Pa)

1.8. Measurement of time—

Year

month

week

day (symbol—) = 86 400 s

hour (symbol—h) = 3600 s

minute (symbol—min) = 60 s

second (symbol—s)

millisecond (symbol—ms) = $\frac{1}{1000}$ s

microsecond (symbol— μs) = $\frac{1}{1000\ 000}$ s

nanosecond (symbol—ns) = $\frac{1}{1000\ 000\ 000}$ s

1.9. *Measurement of plane angle—*

radian (symbol—rad)

$$\text{degree (symbol—}^\circ\text{)} = \frac{1}{180} \text{ rad}$$

$$\text{minute (symbol—')} = \frac{1}{10800} \text{ rad}$$

$$\text{second (symbol—}''\text{)} = \frac{1}{648000} \text{ rad}$$

1.10. *Measurement of solid angle—*

steradian (symbol—sr)

1.11. *Measurement of speed—*

$$\text{kilometre per hour (symbol—km/h)} = \frac{10}{36} \text{ m/s}$$

metre per second (symbol—m/s)

1.12. *Measurement of acceleration—*

metre per second squared (symbol—m/s²)

1.13. *Measurement of angular velocity—*

radian per second (symbol—rad/s)

1.14. *Measurement of angular acceleration—*

radian per second squared (symbol—rad/s²)

1.15. *Measurement of frequency—*

$$\text{gigahertz (symbol—GHz)} = 1000\,000\,000 \text{ Hz}$$

$$\text{megahertz (symbol—MHz)} = 1000\,000 \text{ Hz}$$

$$\text{kilohertz (symbol—kHz)} = 1000 \text{ Hz}$$

hertz (symbol—Hz)

$$\text{millihertz (symbol—mHz)} = \frac{1}{1000} \text{ Hz}$$

1.16. *Measurement of force—*

$$\text{meganewton (symbol—MN)} = 1000\,000 \text{ N}$$

$$\text{kilonewton (symbol—kN)} = 1000 \text{ N}$$

newton (symbol—N)

1.17. *Measurement of viscosity—*

dynamic viscosity—pascal second (symbol—Pa.s)

kinematic viscosity—square metre per second (symbol—m²/s)

1.18. *Measurement of temperature—*

kelvin (symbol—K)

$$\text{degree celsius (symbol—}^\circ\text{C)} = 1 \text{ K}$$

1.19. Measurement of work, energy and quantity of heat—

kilojoule (symbol—kJ)	= 1000 J
joule (symbol—J)	
kilowatt hour (symbol—kWh)	= 3600 000 J

1.20. Measurement of power energy flowrate, heat flowrate—

megawatt (symbol—MW)	= 1000 000 W
kilowatt (symbol—kW)	= 1000 W
watt (symbol—W)	
milliwatt (symbol—mW)	= $\frac{1}{1000}$ W

1.21. Measurement of heat capacity—

kilojoule per kelvin (symbol—kJ/K)	= 1000 J/K
joule per kelvin (symbol—J/K)	

1.22. Measurement of specific energy (calorific value mass basis)

kilojoule per kilogramme (symbol—kJ/kg)	= 1000 J/kg
joule per kilogramme (symbol—J/kg)	
joule per gramme (symbol—J/g)	= 1000 J/kg

1.23. Measurement of specific energy (calorific value volume basis)—

kilojoule per cubic metre (symbol—kJ/m ³)	= 1000 J/m ³
kilojoule per litre (symbol—kJ/l)	= 1000 000 J/m ³

1.24. Measurement of current electricity—

ampere (symbol—A)	
milliampere (symbol—mA)	= $\frac{1}{1000}$ A
microampere (symbol— μ A)	= $\frac{1}{1000\ 000}$ A

1.25. Measurement of electromotive force and potential difference—

kilovolt (symbol—kV)	= 1000 V
volt (symbol—V)	
millivolt (symbol—mV)	= $\frac{1}{1000}$ V
microvolt (symbol— μ V)	= $\frac{1}{1000\ 000}$ V

1.28. Measurement of electric capacitance.—

farad (symbol—F)

microfarad (symbol— μF) = $\frac{1}{1000\ 000}\ \text{F}$

picofarad (symbol— pF) = $\frac{1}{1000\ 000\ 000\ 000}\ \text{F}$

1.29. Measurement of electric inductance.—

henry (symbol—H)

millihenry (symbol— mH) = $\frac{1}{1\ 000}\ \text{H}$

microhenry (symbol— μH) = $\frac{1}{1000\ 000}\ \text{H}$

1.30. Measurement of electric resistance.—

megaohm (symbol— $\text{M}\Omega$) = $1\ 000\ 000\ \Omega$

kiloohm (symbol— $\text{k}\Omega$) = $1\ 000\ \Omega$

ohm (symbol— Ω)

milliohm (symbol— $\text{m}\Omega$) = $\frac{1}{1000}\ \Omega$

microohm (symbol— $\mu\Omega$) = $\frac{1}{1000\ 000}\ \Omega$

1.31. Measurement of quantity of electricity.—

ampere hour (symbol— Ah) = $3600\ \text{C}$

coulomb (symbol— C)

microcoulomb (symbol— μC) = $\frac{1}{1000\ 000}\ \text{C}$

1.32. Measurement of luminous intensity

candela (symbol— cd)

1.33. Measurement of illumination

lux (symbol— lx)

1.34. Measurement of luminous flux.—

lumen (symbol— lm)

PART II

Weights and measures authorised for use in any trade

1. Linear measures.—

Measures of—

100 metres

50 metres

30 metres

20 metres
10 metres
8 metres
2 metres
1 metre
50 centimetres
1 decimetre
1 centimetre
1 millimetre
1 micrometre

2. *Square Measures.*—

measures of or any multiple of,
1 square decimetre.

3. (a) *Cubic Measures.*

Measures of, or any multiple of, the cubic decimetre (=0.001 m³)

(b) *Capacity Measure—Liquid.*—

Measures of—

10 litres or any multiple of 10 litres
5 litres
2 litres
1 litre
500 millilitres
200 millilitres
100 millilitres
50 millilitres
20 millilitres
10 millilitres
5 millilitres
2 millilitres
1 millilitre

4. *Weights.*—

(a) *Weights of—*

50 kilogrammes
20 kilogrammes
10 kilogrammes
5 kilogrammes
2 kilogrammes
1 kilogramme

500 grammes
200 grammes
100 grammes
50 grammes

500 milligrammes
200 milligrammes
100 milligrammes
50 milligramme

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20 grammes

20 milligrammes

10 grammes

10 milligrammes

5 grammes

5 milligrammes

2 grammes

2 milligrammes

1 gramme

1 milligramme

(b) Weights of—

500 carats (metric)

200 carats (metric)

100 carats (metric)

50 carats (metric)

20 carats (metric)

10 carats (metric)

5 carats (metric)

2 carats (metric)

1 carat (metric)

0.5 carats (metric)

0.2 carats (metric)

0.1 carats (metric)

0.05 carats (metric)

0.02 carats (metric)

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