

## APPENDIX - I

### SCHEME AND SYLLABUS OF EXAMINATION FOR THE PURPOSE OF FILLING UP THE POST OF ASSISTANT ENGINEER (MECHANICAL) IN THE SIKKIM STATE MECHANICAL ENGINEERING SERVICE.

1. The examination will consist of 2 papers:-

PAPERS	SUBJECT	FULL MARKS	TIME ALLOWED
PAPER-I	General English & General Knowledge	100	2.30 hours.
PAPER-II	Mechanical Engineering	300	3.00 hours.
VIVA-VOCE - 50 MARKS.			

#### 2. PAPER-I: GENERAL ENGLISH

The question will be designed to test the candidate's understanding and command of the English language. *Mode of Examination pattern shall be objective MCQ and Conventional Type for both Paper-I, General English-General Knowledge and Paper-II (Mechanical Engineering).*

**English:** Candidate will be required to answer questions designed to test their understanding of English and workman like use of words. The patterns of questions would be broadly as follows:-

- (1) Comprehension of given passage.
- (2) Precis writing
- (3) Usages and Vocabulary
- (4) Short essay.

**General Knowledge:** Knowledge of current events of local, National and International importance and of such matter of everyday observation and experience in their scientific aspects as may be expected of any educated person who has not made a special study of any scientific subject. The paper will also include questions on Modern history (from 1857 onwards ) of India, Indian culture, Indian policy, Indian economy and Geography of India of such nature as candidates should be able to answer without Special Study and questions on the techniques of Mahatma Gandhi. The question will be objective type.

#### 3. PAPER -II

The question will be MCQ & CONVENTIONAL TYPE and will cover areas of knowledge of the following subject and topics:-

Subject:

#### MACHINE DESIGN

Chapters

- (1) Introduction and design of Cylinders, Rivetted joints, Shafts, Keys, Couplings, Power Screw and Nut.
- (2) Springs-Introduction & Types of Springs.
- (3) Bearings-Classification and bearing materials.
- (4) Welded connections-Types of welded joints-strength of welds.

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Subject **WORKSHOP TECHNOLOGY.**

- Chapters
- (1) Heat treatment of Iron and Steel.
  - (2) Lubricants and Lubrication.
  - (3) Welding, Soldering and Brazing.
  - (4) Measuring instruments.
  - (5) Metal cutting and cutting tools.
  - (6) Lathe.
  - (7) Drilling Machines.
  - (8) Milling Machines.
  - (9) Surface Fining processes.

Subject **HEAT ENGINE**

- Chapters
- (1) First and Second Law of Thermodynamics.
  - (2) I.C. Engine.
  - (3) Reciprocating Air Compressor.

Subject **THEORY OF MACHINE**

- Chapters
- (1) Simple Mechanism.
  - (2) Motion, Force, Work and Energy.
  - (3) Analysis on Velocity and Acceleration in Mechanism.
  - (4) Friction.
  - (5) Brake and Hydrometer.
  - (6) Governor.
  - (7) Balancing

Subject **WORKS ORGANISATION AND MANAGEMENT**

- Chapters
- (1) Inventory control.
  - (2) Work study.
  - (3) Job evaluation merit rating and wage incentive.
  - (4) Critical Path Economy.
  - (5) Depreciation and Valuation.

Subject **POWER STATION ENGINEERING AND ECONOMY**

- Chapters
- (1) Water power and Hydraulic structures.
  - (2) Energy Source development.

4. **VIVA-VOICE** : The candidates will be interviewed by the Commission who will have before them a record of his career. He will be asked questions on matters of general interest. The object of the interview is to assess the personality suitability of the candidate for the service post.

The test is intended to judge the mental caliber of candidate. In broad terms this is really an assessment of not only his intellectual qualities but also social traits and his interest in current affairs. Some of the qualities to be judged are mental alertness, critical powers of assimilation, care and logical exposition, balance of judgment, variety and depth of interest, ability for social cohesion and leadership intellectual and moral integrity

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