BINOCULAR MICROSCOPE COMPOUND

1. Optical system should be infinity corrected.
2. System complete with illumination system is required.
3. Body: Binocular, sturdy, stable base body with focus adjustment controls.
4. Eye piece: Paired, high quality, (the image of the object as seen through the binocular eyepiece should be well defined centrally in at least 2/3 field of view), achromatic, wide field, 10x with inbuilt pointer. The eyepiece should be aplanatic and have a minimum field number of 18. Diopter adjustment must be present on one/ both eye pieces or on the eye piece tube.
5. Objective: Three objectives10x, 40x, 100x, 10x and 40x objectives should have numerical apertures of 0.25 and 0.65 respectively and should be of spring loaded type or otherwise.100x should have numerical aperture of 1.25 and should be of oil immersion and spring loaded type. Suitable prominent marking should be provided on100x for easy identification. Unbreakable containers to be provided for storing the objectives. All objectives should be wide field, achromatic and parafocal. Making for the Objectives :Each objective should be engraved with the following information's :-

- Name of the manufacturer
- Magnification and numerical aperture, for example,10x/0.25
- 100x objective should be engraved with the word 'Oil' in changing from one objective to another or reintroducing the same objective by rotation of the nosepiece, the object at the center of the field should not appear displaced by more than 0.02 mm in the object plane in any direction.

6. Nose piece: Revolving nose piece to accommodate a minimum of three objectives with click stops. It should be provided with ribbed grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment. Extra ports if any should be fitted with dust proof metallic/ebonite caps.
7. Stage Uniformly horizontal, mechanical stage having dimensions of length 140 mm (+/- 20mm) with fine vermier graduations (minimum reading accuracy of 0.1 mm). the stage should be provided with spring loaded slide holder for exact positioning of specimen/ slide. It should be designed with convenient sub-stage vertical coaxial adjustment for slide manipulation. The stage should have ball-bearing arrangement to allow smooth travel in transverse directions i.e. 80 mm (+/-5mm) and front to back direction, 50mm (+/-5mm).
8. Sub-stage condenser: Abbe-type condenser, numerical aperture (N.A.) 1.25 focusable with rack and pinion arrangement incorporating an aspherical lens and an iris-

diaphragm. The condenser should have a filter holder and removable/ swing in/ out blue filter (suitable for bright field Microscopy).

9. Sub-stage illuminator:

    1. The system should have a build-in variable light source (Illuminator). This light source should have a 20 W, 6 V Halogen lamp. The circuitry for the light source should include a constant voltage supply. The system should be provided with a step down transformer and an on-off switch and intensity control. The lamp should be provided with a lamp socket which has the facility for easy replacement of the bulb,

    2. Power Supply
        a. Voltage220V,50HzAC
        b. Should have one on-off power switch, 3 core power cord with a 3 point male plug.

    3. The system should have an inbuilt protective/ safety device to withstand fluctuations of voltage from 140 V to 280 V

    4. A plano-concave mirror in fork mounting should be supplied which would be attachable to the base for field use. (Where power is not available).

    5. The fuse for the halogen lamp should be easily accessible to the operator

    6. The Illuminator should have a build-in field diaphragm for Kohler illumination.

10. Eye piece tubes: Binocular eye piece tubes, inclined at 45 degrees, rotatable through an angle of 360 degrees, having inter-pupillary distance range of 54-74 mm or wider, covering the above mentioned range.

11. Focusing knob: Co-axial coarse and fine focusing knobs capable of smooth fine focusing movement over the full range of coarse travel. The fine focusing movement should have sensitivity of two microns or less (finer) over the entire coarse focusing stop safety arrangement should be provided.

12. General

    1. All optical parts including objectives, eye pieces and prisms should have anti-reflective coating which also gives anti-fungal property.

    2. All metallic parts should be corrosion-proof, acid-proof and stain-proof

    3. Working manual should be provided with each microscope

    4. A bottle of at least 25 ml immersion oil, a roll of lens tissue paper and lens cleaning solution (100 ml) should be provided with each microscope.

5. One no.of anti static cleaning brush should be provided with each Microscope for cleaning purpose.

13. Microscope should be supplied with spare parts as under:
•100x oil immersion objective (as per the specifications given under B3) – one.
•Halogen bulb,(6volts,20w) – 6Nos.

- Fuses – 6 Nos.

14. All consumables including microscope cover required for installation and standardization of system to be given free of cost.

15. The unit shall be capable of being stored continuously in ambient temperature of 0 - 50deg C and relative humidity of 15-90%.

16. The unit shall be capable of operating continuously in ambient temperature of 10 - 40deg C and relative humidity of 15-90%

17. Power input to be 220-240VAC, 50Hz fitted with Indian plug.

18. Suitable voltage corrector/stabilizer

19. Should be FDA or CE or ISI approved product

20. User/Technical/Maintenance manuals to be supplied.

21. Certificate of calibration and inspection from factory.

22. List of important spare parts and accessories with their part number and costing.