

**Note:** For specifications of BOQ items , item. no. to be followed.  
For specifications links nos. , below item no. to be followed

### **GENERAL INSTRUCTIONS FOR WORKING IN ALREADY FUNCTIONING AREA.**

Construction operations in a Campus which has to be kept running need special attention and careful planning for which following points should be followed.

Possession of premises for construction can be given part by part and the contractor should help and manage in shifting of furniture, instruments and other belongings of the Campus, properly and safely to and from other locations as directed by the Campus authorities.

For working at different floors independent passages, ramps and lifts be installed by the contractor in consultation with authorities. Use age of lifts and stairs of the Campus will not be available for transportation of labours and materials. It may be noted specifically that the rates of all items are uniformly applicable to working on any floor, irrespective of level and height of the floor both for internal and external faces of the buildings.

Care should be taken to minimize noise during construction operations. As far as possible, the noisy operations should be deferred to the non-working hours of the institution. Early, late and night working might be planned in consultation with the authorities. Quicker methods using mechanical tools might be more beneficial in carrying out the work. Of course, mechanical tools do have their own vibration and shrill.

Utmost care should be exercised in handling the construction materials as well as muck / debris to minimize spread of dust to maintain hygiene in the Campus. Loose materials should be transported from one location to the other in covered sacks. Muck from upper floors should not be thrown freely to the ground. The same should be carried in special muck – chutes carefully located in premises.

While working in a particular part / department of the Campus, contractor should carefully plan with all agencies so as to complete all operations in a sequence and give possession of that part / department as soon as possible, without keeping any operation pending, so that working in the same can be reinstituted immediately and other part / department can be made free for working. Team for electrical installation should work hand in hand with teams of other civil work right from beginning of repair work till the end.

Care should be taken by the contractor to avoid any disputes with the occupants of the premises and the construction workers, supervisors or any other staff employed by him. Adequate care should be taken for safety of all persons, either employed or hired by the contractor and occupants including students, staff, patients and visitors in the premises.

### **TESTING AND DOCUMENTATION**

Before starting actual repair operations in any part of the structure, dated photographs should be taken with the help of digital camera for purpose of record, in consultation with the consultant and supervisory staff. During work of repairs also, dated photographs and video should be taken for recording all construction operations. In the same way photographs should be taken for the final condition after completion of repair operations for the particular job. These shall be conveyed to the authorities and consultant through E-mail on the same day. Hard copies of selected photographs will be attached with bill. For easy reference, the photographs should be coded with a matching code on the plan, and a separate register be maintained for keeping its record.

Pre-construction testing of cement, steel and construction chemicals should be carried at the approved

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materials testing laboratory from the samples of materials brought at the site. For concrete test cubes should be taken for proposed mix design and minimum six cubes be cast for testing at 7 days and 28 days. For steel reinforcement, bars of each diameter, from each fresh lot of steel brought at site should be tested for proof stress, elongation, ductility (bend and rebend test), and bond stress. In the same way, if kapachi, grit, sand and other construction materials brought at the site fail approval of the authorities in visual or site tests, samples from the same shall be sent to laboratory for testing as recommended by the consultants.

During construction, test cubes will be taken at the rate of minimum one cube per cubic meter of concrete, with a minimum of three samples from a day's casting. A record of cube tests should be maintained in the specified format. In case of adverse results, arrangement should be made to remove the defective concrete immediately.

Whenever bars are required to be welded, samples of welded bars of different diameters, and alternative welding methods should be got tested similar to fresh reinforcement bars.

For the conventional rolled structural steel as well hollow box sections, testing of steel should be done as per requirement of relevant BIS code. Test reports submitted by suppliers are not acceptable. Selected samples from materials actually delivered to site should be sent for testing to the approved laboratory.

Construction chemicals should be got approved by the consultants and samples of the same shall be got tested at approved laboratories. If required, additional non standard tests shall be carried out as suggested by the consultants. For checking strength of anchoring chemicals, pull out tests shall be carried out as per discretion of the consultants and the site engineer.

Test results should, in general, be interpreted in context with provisions of BIS codes. However the verdict given by the consultants and Chief Engineer would be final and binding to the contractor.

#### **COMMON DESCRIPTION FOR DEMOLITION AND PREPARATORY WORK**

All items mentioned under the criteria of "Demolition" shall include – Providing, erecting and dismantling all necessary scaffolds, tools, tackles, construction cranes and other equipments etc. working at any floors in the functioning facilities, breaking as far as practicable – with Mechanical Breakers using appropriate attachments, scrapping the surfaces with wire-brush or broom to remove the remnant lumps, cleaning the surface with air-jet or water jet, transporting via external independent temporary passage / lift / ramp to avoid disturbance in working of the institute, all debris down to ground level, with the help of covered sacs or chutes or through adjustable, flexible garbage ducts for preventing spread of dust and avoiding free hurling or throwing from upper floors, hauling immediately to the demarcated dump – yards on site, for temporary stacking, segregating the salvable / resaleable scrap and finally carting away remaining debris from the site etc. complete.

For all operations involving "Demolition" there is an option to work manually or by mechanical tools like breakers. Working with mechanical breaker is specified here for

- a. Speeding up construction work
- b. Controlling numbers of workers
- c. Reducing impact to the structure due to heavy hammer blows,
- d. Controlled collection of debris,
- e. Possibility of deferring working hours to harmonise with working of the Institute.

For efficient working with mechanical breaker proper planning of temporary platforms for supporting both

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men and machine should be done. Along with the main jack hammer for breaking, various tools and attachments are provided. Depending upon required depth of demolition, strength of material to be demolished and accuracy required specific attachment should be used.

Cost of working with the mechanical breaker should include cost of all maintenance repairs required for the main machine, consumption of power or fuel and tool-bits cables for drawing power, cost of operator and helper, transportation etc.

Along with the operator for breaker, sufficient number of labourers should be kept for fast removal of debris from the site, which will be done in stages as under;

- a. Horizontal conveyance from the spot of breaking on a particular floor to a muck station on that floor, where retention period should not exceed 24 hours.
- b. Vertical conveyance from the floor muck station downwards with the help of chutes or lifts or through ramp to a temporary stack – yard at ground level, where retention period should not exceed 48 hours.
- c. Horizontal conveyance of salvaged material to store located on ground level, and disposal of rubbish to a spot outside the premises.

Free hurling of debris, or throwing from window or balcony or any opening from upper floor to ground level is strictly prohibited. Any person violating this requirement shall be severely penalized.

After using the breaker, manual demolition operations with the help of chisel or scrapper might be needed for accurate manipulation of the work. The surfaces might be scrapped with wire brush or scrapper and cleaned with brooms etc to receive further repair materials under controlled environment. The surfaces might have to be cleaned with jet of water or air to prevent any loose fine material mixing up with repair materials.

For items pertaining to demolition, no material is consumed. Workmanship and mode of measurement are defined separately in items. Number of sets of machinery to be installed depends upon quantum of work to be handled in given time frame. Proper organization of labour gangs for debris disposal is very important. Workers and supervisory staff should be provided with helmets and safety belts while working at heights. The whole area where demolition work is going on should be cordoned and warning signs prominently displayed.

### **General.**

- 1). **All rates should be inclusive of taking all required precautional measures to execute and carry out the work in safe manner.**
- 2). **To keep good in condition all the building elements those required to be retained.**
- 3). **Protecting building & its surroundings where movements (patients, visitors, vehicular etc.) are envisaged.**
- 4). **Providing necessary barricading, coverings, additional steel supports to the building by forms, props, H Frames, Spans, shuttering etc., where by the purpose of providing the safety & no damage gets solved.**
- 5). **No extra payments will be made for providing such measures stated above.**

### **16.01 Demolition and disposal of unserviceable materials with all leads and lifts: Lime Concrete.**

#### **1.0 Workmanship :**

- 1.1 The demolition shall consist of demolition of one or more parts of the building as specified or shown in the drawings. Demolition implies taking up or down or breaking up. This shall consist of demolishing whole or part of work including all relevant item, as specified or shown in the

The demolition shall always be planned before hand and shall be done in reverse order of the one in which the structure was constructed. This scheme shall be got approved from the Engineer- in-charge before starting the work. This however will not absolve the contractor from the responsibility of proper and safe demolition.

Necessary dropping, shoring and under pinning shall be provided for the safely of the adjoining work or property, which is to be left intact, before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damages is caused to the adjoining property.

Wherever required, temporary enclosures or partitions shall also be provided. Necessary precautions shall be taken to keep the dust nuisance down as and where necessary.

Dismantling shall be commenced in a systematic manner. All materials which are likely to be damaged by dropping from a height or demolishing roof, masonry etc. shall be carefully dismantled first. The dismantled articles shall be properly stacked as directed.

All materials obtained from demolition shall be the property of Government. Unless otherwise specified and shall be kept in safe custody until handed over to the Engineer-in-charge.

Any serviceable materials, obtained during dismantling or demolition shall be separated out and stacked properly as directed, with all lead and lift. All serviceable materials, rubbish etc. shall be stacked as directed by the engineer-in-charge.

On completion of work, the site shall be cleared of all debris rubbish and cleaned as directed.

2.1 Measurement of all work except hidden work shall be taken before demolition or dismantling and no allowance for increase in bulk shall be allowed. The demolition of lime concrete shall be measured under this item. Specifications for deduction for voids, openings etc. shall be on same basis as that employed for construction of work.

2.2 All work shall be measured in decimal system as fixed in tis place subject to the following limits, unless otherwise stated hereinafter:

- (a) Dimensions shall be measured to the nearest 0.01mt.
- (b) Area shall be worked out to the nearest 0.01 sq.mt.
- (c) Cubical connection shall be work out to the nearest 0.01 cu.m.

2.3 The rate shall include the cost of all labour involved and tools used in demolishing and dismantling including scaffolding. The rate shall also include the charges for separating out and stacking the serviceable materials properly and disposing the unserviceable materials with all lead and lift. The rate also includes for temporary storing for the safety of the portion not required to be pulled down or of adjoining property and providing temporary enclosures or partitions where considered necessary.

2.4 The rate shall be for a unit of one cubic meter.

| <b>DE 16.00</b>                                                                                                                                                                          | <b>Demolition and Dismantling Works</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| <b>16.01. Demolition and disposal of unserviceable materials with all leads and lifts. Unreinforced cement concrete.</b>                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>(ii)</b>                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>1.0 Workmanship:</b>                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.1                                                                                                                                                                                      | The relevant specifications of item 16.01 (i) shall be followed except that the reinforced cement concrete work is to be demolished instead of lime concrete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>2.0 Mode of measurement &amp; payment:</b>                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.1                                                                                                                                                                                      | The relevant specifications of item No. 16.1(I) shall be followed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2.2                                                                                                                                                                                      | The rate shall be for a unit of one cubic meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>16.03 Demolition including stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts : RCC Works.</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>1.0 Workmanship:</b>                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.1                                                                                                                                                                                      | The relevant specifications of items no. 16.01(i) shall be followed except that demolition of RCC Work is to be done.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1.2                                                                                                                                                                                      | Where ever necessary while breaking concrete for RCC slabs, a complete centering should be done below, as if a new slab is to be cast. Breaking is being done from upper level. The centering should be strong to withstand impact and vibration while working with breaker. Sometimes there is a temptation to work from one edge and proceed towards the other edge, working on the reinforcement jail, this would results into avoidance of centering with another objective of dropping the debris to the lower level without involving extra labour. In the distressed structure, it cannot be relyed on reinforcement to carry load of men and machinery. Corroded steel might give way any time. If fresh slab is not to be cast at the same location, reinforcement is cut off after removal of concrete. |
| 1.3                                                                                                                                                                                      | While breaking concrete for RCC beams, care should be taken to support slabs on both sides of the beam. If beam is to be retrofitted after partial removal of concrete, all superimposed loads should be relieved and adequate props be placed at selected locations below the beam too. In case of partial precise demolition of beams, manual breaking might be advantageous.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1.4                                                                                                                                                                                      | Column demolition is normally partial only. Before executing demolition of column, adequate props have to be provided to transfer of loads from the uppermost level up to the working level. Damaged concrete should be removed all round including the one behind the corroded bars, very carefully, preferably manually.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>2.0 Mode of Measurement and payment:</b>                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.1                                                                                                                                                                                      | The relevant specifications of items No. 16.01 shall be followed except that the demolition of reinforced concrete structure. The unserviceable materials shall be disposed of all leads and lifts. The rate excludes scraping straightening of reinforcement but includes cutting of reinforcement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2.2                                                                                                                                                                                      | The rate shall be for a unit of one cubic meter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>16.11(ii) Demolition of brick work and stone masonry including stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts in lime mortar.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>DE 16.00</b>                                                                                                                                                                                                                                                                                         | <b>Demolition and Dismantling Works</b>                                                                                                                                                                                                                                                              |
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| <b>1.0</b>                                                                                                                                                                                                                                                                                              | <b>Workmanship:</b>                                                                                                                                                                                                                                                                                  |
| 1.1                                                                                                                                                                                                                                                                                                     | The relevant specification of item No. 16.1 (I) shall be followed except that demolition of brick or stone masonry in lime mortar is to be done.                                                                                                                                                     |
| <b>2.0</b>                                                                                                                                                                                                                                                                                              | <b>Mode of measurement and payment:</b>                                                                                                                                                                                                                                                              |
| 2.1                                                                                                                                                                                                                                                                                                     | The relevant specifications of item No. 16.1 (I) shall be followed except that the wall and independent piers of columns of brick or stone masonry shall be measured in cubic meters. All copings, corbels, cornices and other projections shall be included with the wall measurements.             |
| 2.2                                                                                                                                                                                                                                                                                                     | In measuring thickness plastered walls, the thickness of plaster shall be included. The unserviceable materials shall be disposed off with all lead and lift. Ashlar face stones dressed stone etc. if required to be taken down intact shall be dismantled and measured separately in cubic meter.  |
| 2.3                                                                                                                                                                                                                                                                                                     | The rate is exclusive of cleaning of bricks or stones. Honey comb works or hollow block walling shall be measured as solid.                                                                                                                                                                          |
| 2.4                                                                                                                                                                                                                                                                                                     | The rate shall be for a unit of one cubic meter.                                                                                                                                                                                                                                                     |
| <b>16.11(iii) Dismantling of brick work and stone masonry including both side plastering or cladding, stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts including dismantling concealed pipes etc. complete in cement mortar.</b>                      |                                                                                                                                                                                                                                                                                                      |
| <b>1.0</b>                                                                                                                                                                                                                                                                                              | <b>Workmanship:</b>                                                                                                                                                                                                                                                                                  |
| 1.1                                                                                                                                                                                                                                                                                                     | The relevant specifications of item no. 16.01 (I) shall be followed except demolition of brick or stone masonry in cement mortar is to be done.                                                                                                                                                      |
| <b>2.0</b>                                                                                                                                                                                                                                                                                              | <b>Mode of measurement and payment:</b>                                                                                                                                                                                                                                                              |
| 2.1                                                                                                                                                                                                                                                                                                     | The relevant specifications of item No. 16.01 (i) shall be followed except that the wall and independent piers of columns of brick or stone masonry shall be measured in cubic meters. All copings, corbels, cornices and other projections shall be included with the wall measurements.            |
| 2.2                                                                                                                                                                                                                                                                                                     | In measuring thickness plastered walls, the thickness of plaster shall be included. The unserviceable materials shall be disposed off with all lead and lift. Ashlar face stones dressed stone etc. if required to be taken down intact shall be dismantled and measured separately in cubic meters. |
| 2.3                                                                                                                                                                                                                                                                                                     | The rate is exclusive of cleaning of bricks and stones. Honey comb works and hollow block walling shall be measured as solid.                                                                                                                                                                        |
| 2.4                                                                                                                                                                                                                                                                                                     | The rate shall be for a unit of one cubic meter.                                                                                                                                                                                                                                                     |
| <b>16.22. Demolition of terrace covering like tiles / IPS / china mosaic with under layers of BBCC, BBLC, Brick bat koba etc of any thickness, upto the top of concrete of terrace slab, including stacking of servicable materials and disposal of unserviceable materials with all lead and lift.</b> |                                                                                                                                                                                                                                                                                                      |
| <b>1.0</b>                                                                                                                                                                                                                                                                                              | <b>Materials:</b>                                                                                                                                                                                                                                                                                    |
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| <b>DE 16.00</b>                                                                                                                                               | <b>Demolition and Dismantling Works</b>                                                                                                                                                                                                                                                                                                        |
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| 1.1                                                                                                                                                           | The relevant specifications of item 16.01(I) shall be followed except that the demolition of terrace tiles / any covering is to be done.                                                                                                                                                                                                       |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment:</b>                                                                                                                                                                                                                                                                                                        |
| 2.1                                                                                                                                                           | The relevant specifications of item 16.1 (I) shall be followed except that the tiles / any covering of terrace shall be measured in sq.mt. The unserviceable materials shall be stocked as directed at all leads and lifts.                                                                                                                    |
| 2.2                                                                                                                                                           | The rate shall be for a unit of one sq.meter.                                                                                                                                                                                                                                                                                                  |
| <b>16.23</b>                                                                                                                                                  | <b>Dismantling tiled or stone floors laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts.</b>                                                                                                                                                                          |
| <b>1.0</b>                                                                                                                                                    | <b>Workmanship:</b>                                                                                                                                                                                                                                                                                                                            |
| 1.1                                                                                                                                                           | The relevant specifications of item 16.1(I) shall be followed except the dismantling of tiled or stone floors laid on mortar shall be done. Dismantling implies carefully taking up or down or these are fixed by nail, screws, bolts etc. these shall be taken out with proper tools.                                                         |
| 1.2                                                                                                                                                           | Before removing floor-finish the slab below the finishing should be inspected and its damage be assessed. Impacts and vibration given to the supporting slabs below the finishing material might worsen the distress. If structural system supporting the finish is very weak, the same should be adequately propped as precautionary measure. |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment</b>                                                                                                                                                                                                                                                                                                         |
| 2.1                                                                                                                                                           | The supporting materials such as joints, beams if any etc., shall be measured separately, the relevant specifications of item no 16.01 (I) shall be followed. The rate shall included stacking the unserviceable materials as directed with all lead and lift.                                                                                 |
| 2.2                                                                                                                                                           | The rate shall be for a unit of one sq.mtr.                                                                                                                                                                                                                                                                                                    |
| <b>16.25</b>                                                                                                                                                  | <b>Dismantling of wooden floors, including stacking of serviceable materials and disposal of unserviceable materials with all lead and lifts.</b>                                                                                                                                                                                              |
| <b>1.0</b>                                                                                                                                                    | <b>Materials</b>                                                                                                                                                                                                                                                                                                                               |
| 1.1                                                                                                                                                           | The relevant specifications of item no. 16.1 (I) shall be followed except that wooden floors shall be dismantled.                                                                                                                                                                                                                              |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment:</b>                                                                                                                                                                                                                                                                                                        |
| 2.1                                                                                                                                                           | The relevant specifications of item No.16.1 (I) shall be followed. The supporting members such as joints, beams, etc., shall be measured separately. The rate shall include disposal of unserviceable materials as directed with all leads and lifts.                                                                                          |
| 2.2                                                                                                                                                           | The rate shall be for a unit of sq. meter.                                                                                                                                                                                                                                                                                                     |
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| <b>DE 16.00</b>                                                                                                                                                                                                                             | <b>Demolition and Dismantling Works</b>                                                                                                                                                                             |
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| <b>16.27(I)Dismantling of sheet roofing including ridges, hips, valley, gutters etc, stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts G.I. Sheet roofing.</b>                             |                                                                                                                                                                                                                     |
| <b>1.0 Materials:</b>                                                                                                                                                                                                                       |                                                                                                                                                                                                                     |
| 1.1                                                                                                                                                                                                                                         | The relevant specifications of item No. 16.01 (I) shall be followed except that G.I. sheet roofing shall be dismantled instead of concrete work.                                                                    |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                 |                                                                                                                                                                                                                     |
| 2.1                                                                                                                                                                                                                                         | The area of G.I. Sheet roofing shall be measured in sq. meter, Ridge, hips and valley shall be girthed and included with roof area. Corrugated and semi-corrugated surfaces shall be measured flat and not girthed. |
| 2.2                                                                                                                                                                                                                                         | Supporting member such as rafters, purlins, beams, joints, trusses, etc., shall be measured separately.                                                                                                             |
| 2.3                                                                                                                                                                                                                                         | The rate shall be include disposal of unserviceable materials with all leads and lifts and stacking the serviceable materials as directed.                                                                          |
| 2.4                                                                                                                                                                                                                                         | The rate shall be for a unit of one sq. meter.                                                                                                                                                                      |
| <b>16.27(II) Dismantling of sheet roofing including ridges, hips, valleys, gutters etc. stacking or serviceable materials and disposal of unserviceable materials with all leads and lifts: A.C sheet roofing &amp; G.I. Sheet roofing.</b> |                                                                                                                                                                                                                     |
| <b>1.0 Workmanship:</b>                                                                                                                                                                                                                     |                                                                                                                                                                                                                     |
| 1.1                                                                                                                                                                                                                                         | The relevant specifications of item No. 16.27 (i) shall be followed except that the A.C. Sheets roofing shall be measured in this item.                                                                             |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                 |                                                                                                                                                                                                                     |
| 2.1                                                                                                                                                                                                                                         | The relevant specifications of item No. 16.27 (i) shall be followed except that the A.C. Sheets roofing shall be measured in this item.                                                                             |
| 2.2                                                                                                                                                                                                                                         | The rate shall be for a unit of one sq. meter.                                                                                                                                                                      |
| <b>16.28 Dismantling manglore or country tile roofing with battens, boarding etc. including stacking of serviceable materials and disposal of unserviceable materials with all leads and lifts.</b>                                         |                                                                                                                                                                                                                     |
| <b>1.0 Workmanship:</b>                                                                                                                                                                                                                     |                                                                                                                                                                                                                     |
| 1.1                                                                                                                                                                                                                                         | The relevant specifications of item no. 16.1 (i) shall be followed that the country tile roof of manglore roof shall be dismantled.                                                                                 |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                 |                                                                                                                                                                                                                     |
| 2.1                                                                                                                                                                                                                                         | The relevant specifications of item No. 16.1 (I) shall be followed.                                                                                                                                                 |
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| <b>DE 16.00</b>                                                                                                                                               | <b>Demolition and Dismantling Works</b>                                                                                                                                                                                      |
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| 2.2                                                                                                                                                           | The supporting members shall be measured under separate item.                                                                                                                                                                |
| 2.3                                                                                                                                                           | The rate includes labour required for disposal of unserviceable item with all leads and lifts.                                                                                                                               |
| 2.4                                                                                                                                                           | The rate shall be for a unit of one sq. meter.                                                                                                                                                                               |
| <b>16.30</b>                                                                                                                                                  | <b>Dismantling cement asbestos / hard board in ceiling or partition walls, wooden trellis work including frames, stacking of the serviceable materials and disposal of unserviceable materials with all leads and lifts.</b> |
| <b>1.0</b>                                                                                                                                                    | <b>Workmanship:</b>                                                                                                                                                                                                          |
| 1.1                                                                                                                                                           | The relevant specifications of item no. 16.1 (I) shall be followed except that the cement asbestos hard board in ceiling partitions walls, wooden trellis, works etc.                                                        |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment:</b>                                                                                                                                                                                      |
| 2.1                                                                                                                                                           | The relevant specifications of item No. 16.1 (I) shall be followed. The serviceable materials shall be stacked as and where directed and the unserviceable materials shall be disposed off with all leads and lifts.         |
| 2.2                                                                                                                                                           | The rate shall be for a unit of one sq. meter.                                                                                                                                                                               |
| <b>16.35</b>                                                                                                                                                  | <b>Dismantling wood work, wrought frame and fixed in frames, trusses including stacking the materials with all leads and lift.</b>                                                                                           |
| <b>1.0</b>                                                                                                                                                    | <b>Workmanship:</b>                                                                                                                                                                                                          |
| 1.1                                                                                                                                                           | The relevant specifications of item No. 16.1 (I) shall be followed except that the wood work, wrought framed, and fixed in frames, trusses, etc., shall be dismantled.                                                       |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment:</b>                                                                                                                                                                                      |
| 2.1                                                                                                                                                           | The relevant specifications of item No. 16.1 (i) shall be followed.                                                                                                                                                          |
| 2.2                                                                                                                                                           | The materials shall be stacked as and where directed with all leads and lifts.                                                                                                                                               |
| 2.3                                                                                                                                                           | The rate shall be for a unit of one cubic meter.                                                                                                                                                                             |
| <b>16.39</b>                                                                                                                                                  | <b>Dismantling expanded metal or I.R.C. fabric with necessary battens and beadings including frame work and stacking the serviceable materials with all leads and lifts.</b>                                                 |
| <b>1.0</b>                                                                                                                                                    | <b>Workmanship:</b>                                                                                                                                                                                                          |
| 1.1                                                                                                                                                           | The relevant specifications of item no. 16.1 (i) shall be followed except that the dismantling of expanded metal or I.R.C. fabric shall be done.                                                                             |
| <b>2.0</b>                                                                                                                                                    | <b>Mode of measurement and payment:</b>                                                                                                                                                                                      |
| 2.1                                                                                                                                                           | The relevant specifications of item No. 16.1 (i) shall be followed.                                                                                                                                                          |
| <p>Construction of Neutronics Laboratory Building and allied works at Institute for Plasma Research (IPR), Bhat, Gandhinagar..</p> <p>CW 15 -page 9 of 14</p> |                                                                                                                                                                                                                              |

2.2 The rate shall be for a unit of one sq. meter.

**16.43 Dismantling steel work including dismembering and stacking the materials with all leads and lifts.**

**1.0 Materials:**

1.1 The relevant specifications of item no. 16.1 (i) shall be followed except that the dismantling of steel works shall be carried out.

**2.0 Mode of measurement and payment:**

2.1 The relevant specifications of item No. 16.1 (i) shall be followed.

2.2 The weight of the member shall be computed from standard tables unless the actual weight can be readily determined.

2.3 Riveted works where rivets are required to be cut, the same shall be carried out under this item and nothing extra shall be paid.

2.4 In farmed steel gate, the weight of any covering materials of filling such as iron sheets and expanded metal shall be added to the weight of the main articles if such covering is not ordered to be taken out separately.

2.5 The rate includes stacking the materials as and where directed with all leads and lifts.

2.6 The rate shall be for a unit of one kg.

**16.49(i) Dismantling doors, windows, ventilators etc. (woods or steel) shutters, including chowkhats, architraves, holdfasts and other attachment (such as grill etc.) directly or indirectly attached to etc. complete and stacking them within all leads & lift.**

**1.0 Workmanship:**

1.1 The relevant specifications of item no. 16.1 (i) shall be followed except that the doors, windows, ventilators etc. (wood or steel) shutters including chowkhats, architraves, holdfasts and other attachments etc. are to be dismantled.

**2.0 Mode of measurement and payment:**

2.1 The relevant specifications of item no. 16.1(i) shall be followed.

2.2 The doors, windows, ventilators etc. not exceeding 3 sq. mtrs. In area (each) including shutters and chowkhats, Architraves, holdfasts and other attachment to frames etc. will be dismantled and measured under this item.

2.3 The rate includes stacking serviceable materials as and where directed with all leads and lifts.

2.4 The rate shall be for a unit of one number.

| <b>DE 16.00</b>                                                                                                                                                                                                                                                                                                                              | <b>Demolition and Dismantling Works</b>                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>16.49(ii) Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats, Architraves, hold fasts and other attachments etc. complete and stacking them within all leads and lifts exceeding 3 sq. meters in area.</b>                                                                                         |                                                                                                                                                                                                                                                                    |
| <b>1.0 Workmanship:</b>                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                    |
| 1.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item No. 16.49 (ii) shall be followed except that the area of doors, windows, ventilators, exceeding 3 sq. meter are to be dismantled under this item.                                                                              |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                    |
| 2.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item No. 16.49(i) above shall be followed.                                                                                                                                                                                          |
| 2.2                                                                                                                                                                                                                                                                                                                                          | The rate shall be for a unit of one number.                                                                                                                                                                                                                        |
| <b>16.51 Dismantling barbed wire / chain link / any other type of fencing including marking rolls and also including dismantling fencing posts including all earth work concrete in base and making good the disturbed ground stacking useful materials as directed and disposing of the unserviceable materials with all lead and lift.</b> |                                                                                                                                                                                                                                                                    |
| <b>1.0 Workmanship:</b>                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                    |
| 1.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item No. 16.01 (i) shall be followed except that the dismantling of barbed wire fencing shall be carried out.                                                                                                                       |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                    |
| 2.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item No. 16.01 (i) shall be followed.                                                                                                                                                                                               |
| 2.2                                                                                                                                                                                                                                                                                                                                          | The rate includes making rolls of dismantled wires and including dismantling fencing posts, concrete works, in case and making good the disturbed ground etc. complete.                                                                                            |
| 2.3                                                                                                                                                                                                                                                                                                                                          | The serviceable materials shall be stacked as and where directed and the unserviceable materials shall be disposed with all leads and lifts.                                                                                                                       |
| 2.4                                                                                                                                                                                                                                                                                                                                          | The rate shall be for a unit of one running meter.                                                                                                                                                                                                                 |
| <b>16.56 Dismantling C.I pipes, G.S.W pipes and A.C rain water pipes with fitting and clamps including staking the material with all lead &amp; lift (for any dia pipe).</b>                                                                                                                                                                 |                                                                                                                                                                                                                                                                    |
| <b>1.0 Workmanship:</b>                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                    |
| 1.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item no. 16.23 shall be followed except that the dismantling work of pipe lines of C.I. G.S.W & A.C. pipes with fittings shall be carried out.                                                                                      |
| <b>2.0 Mode of measurement and payment:</b>                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                    |
| 2.1                                                                                                                                                                                                                                                                                                                                          | The relevant specifications of item No. 16.01 (i) shall be followed.                                                                                                                                                                                               |
| 2.2                                                                                                                                                                                                                                                                                                                                          | Water pipe lines, including rain water pipes, with clamps and specials, sewer pipe lines (Salt glazed ware or concrete) etc. shall be measured in running meter inclusive of joints (The measurements shall be taken along the centre line of pipes and fittings). |
| <p>Construction of Neutronics Laboratory Building and allied works at Institute for Plasma Research (IPR), Bhat, Gandhinagar..</p> <p><b>CW 15 -page 11 of 14</b></p>                                                                                                                                                                        |                                                                                                                                                                                                                                                                    |

| DE 16.00                                                                                                                    | Demolition                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | and | Dismantling | Works |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------|-------|
| 2.3                                                                                                                         | The rate shall be for a unit of one running meter.                                                                                                                                                                                                                                                                                                                                                                                                                           |     |             |       |
| 16.57                                                                                                                       | Dismantling of sanitary fitting like washbasin, Water closet pan indian & european type, flushing tank including stacking the materials with all lead and lift.                                                                                                                                                                                                                                                                                                              |     |             |       |
| 1.0                                                                                                                         | Workmanship:                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |             |       |
| 1.1                                                                                                                         | The relevant specifications of item no. 16.23 shall be followed except that the dismantling work of sanitary fittings such as wash basin, W. C. Pan (all type of pans), Flushing tanks etc. shall be carried out.                                                                                                                                                                                                                                                            |     |             |       |
| 2.0                                                                                                                         | Mode of measurement and payment:                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |             |       |
| 2.1                                                                                                                         | The relevant specifications of item no. 16.1 (I) shall be followed.                                                                                                                                                                                                                                                                                                                                                                                                          |     |             |       |
| 2.2                                                                                                                         | The rate shall be for a unit of one number.                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |             |       |
| 16.002                                                                                                                      | Scraping oil paint from steel and other metal surface and making the surface even (with hand scraping).                                                                                                                                                                                                                                                                                                                                                                      |     |             |       |
| 1.0                                                                                                                         | Workmanship:                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |             |       |
| 1.1                                                                                                                         | The oil paint from steel and other metal surface shall be scraped thoroughly with hand scrapper followed by wire brushing (first with coarse and then with fine brushes) and finally sand papering with coarse and paper (No. 3) steel wood (No.2) or emery paper (No. 3) or with emery clothes. This shall then be wiped finally with mineral terpening to remove grease and perspiration of hand marks etc. and allowed to dry. The surface shall be made even and smooth. |     |             |       |
| 2.0                                                                                                                         | Mode of measurement and payment:                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |             |       |
| 2.1                                                                                                                         | The work shall be measured in actual area of work done.                                                                                                                                                                                                                                                                                                                                                                                                                      |     |             |       |
| 2.2                                                                                                                         | The rate shall be for a unit of one sq. meter.                                                                                                                                                                                                                                                                                                                                                                                                                               |     |             |       |
| 16.05                                                                                                                       | Dismantling glazed tiles dado / flooring etc., and as directed including taking the materials to all leads and lifts as directed etc complete.                                                                                                                                                                                                                                                                                                                               |     |             |       |
| 2.0                                                                                                                         | Workmanship:                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |             |       |
| 1.1                                                                                                                         | The relevant specifications of item no. 16.15 shall be followed except that the dismantling work of glazed tiles dado and flooring work to be done.                                                                                                                                                                                                                                                                                                                          |     |             |       |
| 2.0                                                                                                                         | Mode of measurement and payment:                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |             |       |
| 2.1                                                                                                                         | The relevant specifications of item no. 16.05 (I) shall be followed.                                                                                                                                                                                                                                                                                                                                                                                                         |     |             |       |
| 2.3                                                                                                                         | The rate shall be for a unit of one sq. meter.                                                                                                                                                                                                                                                                                                                                                                                                                               |     |             |       |
| 16.04                                                                                                                       | Dismantling of all types of Plaster, raking out joints and cleaning the surface for new plaster at all heights, including disposal of debris, dumping to the ground and within 50 meters lead.                                                                                                                                                                                                                                                                               |     |             |       |
| Construction of Neutronics Laboratory Building and allied works at Institute for Plasma Research (IPR), Bhat, Gandhinagar.. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |             |       |
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**1.0 Workmanship:**

- 1.1 The demolition shall consist of demolition of any type of plaster for different thickness with niru finishing and/ or sand faced plaster at any floor and at any height. Wherever required temporary enclosures or partition shall be provided necessary precaution shall be taken to keep the dust nuisance down as and where necessary. It should be done with the help of flat scrapper attachment of the breaker machine, taking care not to damage RCC or masonry wall, While removing the plaster special care should be taken. Sometimes manual removal of plaster might be safer as compared to mechanical breaker.
- 1.2.1 Dismantling shall be commenced in systematic manner. Necessary scaffolding shall be provided for the safety of the adjoining work or property. Dismantling is taken up and work shall be carried out in such way that no damage is caused to the buildings and adjoining property. All usable materials obtained from dismantling shall be stacked as and where directed and unserviceable materials shall be disposed as and where directed.
- 1.2.2 In case of removal of plaster over the masonry walls, the joints of masonry should be racked off. Peeling of plaster and racking of masonry joints might be done simultaneously with the breaker.

**2.0 Mode of measurement and payment:**

- 2.1 The rate includes the cost of tools, centring and labour required for dismantling at any existing surface of the wall.
- 2.2 The rate shall be for a unit of one Sq.Mtr.

**Item No. 14.A**

**Dismantling, demolition of platform (raised / kitchen) of any kind (Kota Stone / Granite / Cement concrete / sandwich) etc., including removing of stone slab, concrete, screed mortar, brickwork and making good the same including filling the jari work. Rate shall be inclusive for all heights at all floors, width, dimension etc. complete. The rate shall also be inclusive of removing / dismantling of sink (SS / Chinaware) etc. etc. complete as directed and instructed including stacking of serviceable materials and disposal of unserviceable material with all leads and lifts.**

Relevant specifications of items to be followed. The rate shall be for a unit of one Sq. Mtr.

**Item No. 14.B**

**Dismantling of A.C. including all disconnection of electrical & drain provisions made & depositing the same to the concern authority as directed by EIC. The rates shall be inclusive of carrying out the work at all floors / all levels / all heights.**

Relevant specifications of items to be followed. The rate shall be for a unit of no.

**Item No. 14.C**

**Dismantling of Water Cooler including all disconnection of electrical, drainage & water supply provision made & depositing the same to the concern authority as directed by EIC. The rates shall be inclusive of carrying out the work at all floors / all levels / all heights.**

Relevant specifications of items to be followed. The rate shall be for a unit of no.

**Item No. 14.D**

**Scrapping of all kinds of existing painted surfaces like white wash, oil paints or such painted surfaces to achieve repaintable surface. The rates shall be inclusive of carrying out the work at all heights / all levels / all floors and disposal of material etc. complete.**

Relevant specifications of items to be followed. The rate shall be for a unit of a unit of one Sq. Mtr.

**Item No. 14.E**

**Disconnecting and taking out existing elevators, including termination of existing electrical cables, taking out all the accessories, clamps etc. complete. Safely taking out the lift and depositing the same to the concern authority as directed by EIC. Rate shall be inclusive of taking out any type of elevator and making the same carry out the retrofitting work.**

Relevant specifications of items to be followed. The rate shall be for a unit of Job.

**Item No. 14.F**

**Dismantling / Demolition of all types of false ceiling, including stacking and depositing the dismantled material and making good for proposed work..**

Relevant specifications of items to be followed. The rate shall be for a unit of Smt.

**A01 Dismantling of flexible pavement and subbase (existing tar road, subbase and all elements below subbase of pavement) by mechanical means or manual means including stacking of serviceable materials in Institute campus and disposal of unserviceable materials out side Institute campus all as per specification & direction of Engineer-in-charge. Contractor will be solely responsible for finding out non objectionable place for dumping, disposing, storing of unuseful (unserviceable) materials out side campus and taking all precautions for not to damage any surroundings and carry out the dismantling and demolition work with proper safety precautions. All materials should be stacked at place as suggested by EIC. (Engineer-In-Charge decision regarding useful (serviceable) or unuseful (unserviceable) materials shall be final and binding.)**

Relevant specification shall be followed as above mentioned

**Mode of Measurement and Payment.**

The work shall be measured under relevant item in the schedule of quantities and paid for.