SCHEME OF VALUATION

Revision : 2015 Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|
| I. | PART- A | | | |
| 1. | Length of Common Rafter is given by 0.6 x Eave span | | | 2 |
| 2. | Abutment is a masonry or RCC wall which forms the end support of culvert, bridge or similar structure. | 1 | | |
| | Wing wall is masonry or RCC wall which sustains the horizontal pressure of embankment of approaches. | 1 | | 2 |
| 3. | Total length of bar = $L + 2 \times 9\phi + 2 \times 0.45d$ where $\phi \rightarrow$ dia. of steel bar and $d \rightarrow$ vertical distance between upper and lower arms of bent up bars. | | | 2 |
| 4. | Valuation is the process of ascertaining the fair price or value of property at a specified time. Valuation is greatly varied with time. | | | 2 |
| 5. | Book value is the value of property shown in the account book in that particular year. In other words, it is the original cost minus depreciation till that year. | | | 2 |
| II | PART- B | | | |
| 1. | Centre line length of horizontal outerwall, AB $= \frac{0.35}{2} + 3.6 + 0.35 + 3.6 + 0.35 + 3.6 + \frac{0.35}{2}$ $= 11.85$ m. | | | |
| | CL length of vertical outer wall, BC $= \frac{0.35}{2} + 3 + 0.35 + 1.5 + 0.35 + 4.2 + \frac{0.35}{2} = 9.75$ m | | | |
| | CL length of EF & GH = 9.75m (same as BC) | | | |
| | CL length of IJ = KL = MI = RS = PQ = NO = $3.60 + 2 \times \frac{0.35}{2} = 3.95$ m. | | | |

SCHEME OF VALUATION

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| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|

∴ Centre line alround the building, ABCD = 2(AB+BC)
= 2×(11.85+9.75) = 43.20 m.

| | Description | No | L(m) | B(m) | H(m) | Qty (m³) | Remarks |
|---|---|---|---|---|---|---|---|
| 1. | Earthwork excavation | | | | | | |
| a) | Alround the building | 1 | 43.20 | 0.90 | 0.90 | 34.99 m³ | |
| b) | Long cross walls | 2 | 8.85 | 0.90 | 0.90 | 14.34 m³ | L=(9.75-0.90) |
| c) | Short cross walls | 6 | 3.05 | 0.90 | 0.90 | 14.82 m³ | L=(3.95-0.90) |
| | | | | | | 64.15 m³ | |

Split up score: 6 — Total: 6

2.

| Description | No | L(m) | B(m) | H(m) | Qty (m²) | Remarks |
|---|---|---|---|---|---|---|
| 12mm Cement plaster 1:3 (Innerface) | | | | | | |
| Long walls | 2 | 2.00 | - | 1.70 | 6.8 m² | H = 1.4+0.30 = 1.70 |
| Short walls | 2 | 0.90 | - | 1.70 | 3.06 m² | |
| | | | | | 9.86 m² | |
| 20mm Cement plaster 1:3 in floor of septic Tank. | 1 | 2.00 | 0.90 | - | 1.80 m² | |

Split up score: 4, 2 — Total: 6

3.

| Description | No | L(m) | B(m) | H(m) | Qty (m³) | Remarks |
|---|---|---|---|---|---|---|
| Cement Concrete 1:4:8 in foundation | | | | | | |
| Pier | 1 | 10.4 | 2.2 | 0.45 | 10.296 | |
| Cut water end | 1 | 0.55 | 1.60 | 0.45 | 0.396 | |
| | | | | | 10.692 m³ | |

Split up score: 3, 3 — Total: 6

SCHEME OF VALUATION

| Revision : 2015 | | | | Course Code: 5014 |
|---|---|---|---|---|
| Course Title : Quantity Surveying - II | | | | |
| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
| 4. | Painting : The surface to be painted shall be prepared by rubbing with sand paper of different grades, first with coarse and successively with fine sand papers. All the holes, cracks, open joints, knots etc. shall be filled with strong putty or with mixture of glue and plaster of paris and smoothened by rubbing with sand paper. In case of steel suface, it shall be done by scrapping and brushing.<br>In new works, the first coat is a prime coat and thereafter at least two coats of specified paint shall be applied. The paint or primer shall be applied with brushes evenly so that no brush marks are visible. Each coat shall be perfectly dry before the next is applied. Before the last finishing coat is applied, the surface shall be rubbed with zero sand paper so that smooth and glazed suface could be obtained. The paint should be continuously kept stirred while using. Brushes should be cleaned and washed with turpentine oil at the end of day's work and kept dry. If mixed up paint is to be kept overnight, it should either be kept in closed tin or open tin containing mixed paint should be kept covered.<br>If old painted suface is to be repainted without removing the old paint, the suface should be washed with soda water and then paint shall be applied.<br>For the surfaces of steel work exposed to weather the painting should be done either with red oxide paint or with aluminium paint and shall be carried out during the dry weather only. | | | 6 |

SCHEME OF VALUATION

Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|

5.

| Description | No | L(m) | B(m) | H(m) | Qty | Remarks |
|---|---|---|---|---|---|---|
| Cement Concrete 1:4:8 for foundation. | 1 | 1 | 1 | 0.3 | $0.3\,m^3$ | |
| RCC 1:2:4 with 20mm size metal. | | | | | | |
| a) For base mat portion | 1 | 1 | 1 | 0.2 | $0.2\,m^3$ | |
| b) For Trapezoidal portion | 1 | $\frac{1+0.3}{2}$ | 0.5 | 0.5 | $0.16\,m^3$ | |
| c) For column in basement + Superstructure (H = 0.6 + 3.3 m) | 1 | 0.3 | 0.3 | 3.9 | $0.35\,m^3$ | |
| | | | | | $0.71\,m^3$ | |

Split up score: 2, 2, 2 — Total: 6

6. Different methods of valuation are :

i) Rental method of valuation

ii) Direct comparison with capital value.

iii) Valuation based on profit

iv) Valuation based on cost.

v) Development method or Residual method

vi) Depreciation method.

Split up score: 3

i) Rental method of valuation : This method is adopted when rent of property is known or probable, rent is determined by enquiries. The valuation of property is determined from the following steps :

1. Calculate the net income after deducting the outgoings from gross rent.
2. Calculate the years purchase after adopting current bank interest.
3. Workout the value of property or capitalized cost of property by multiplying net rental income by years purchase.

Split up score: 2

ii) Direct comparison with capital value : This method

Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|
| | is adopted when the data relating to rental income is not available and when there are evidences of sale price of properties of nearby locality is available. The capitalized value of property is assessed by direct comparison with the capitalized value of similar property in that locality. (Or explanation of any 2 other methods). | 1 | | 6 |
| 7. | Annual installment of sinking fund, I = Rs. 25,000/-<br>Number of years, n = 25<br>Rate of interest, i = 6%.<br>Amount of sinking fund, $S = \frac{I \times [(1+i)^n - 1]}{i}$<br>$= \frac{25,000 \times [(1+0.06)^{25} - 1]}{0.06}$<br>= Rs. 13,71,613/- | | | 6 |

PART - C

III

| Description | No | L(m) | B(m) | H(m) | Qty | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|
| i) Cement Concrete 1:5:10 | | | | | | | | | |
| a) Around the building | 1 | 43.2 | 0.9 | 0.3 | 11.66 $m^3$ | | 1 | | |
| b) Long cross wall | 2 | 8.85 | 0.9 | 0.3 | 4.78 $m^3$ | L=(9.75-0.9) | 1 | | |
| c) For short cross wall | 6 | 3.05 | 0.9 | 0.3 | 4.94 $m^3$ | L=3.95-0.9 | 1 | 3 | |
| | | | | | 21.38 $m^3$ | | | | |
| ii) RR masonry in CM 1:6 for foundations & basement. | | | | | | | | | |
| a) For Foundation. | | | | | | | | | |
| Around the building | 1 | 43.2 | 0.6 | 0.6 | 15.55 $m^3$ | | 1 | | |
| For Long cross wall | 2 | 9.15 | 0.6 | 0.6 | 6.59 $m^3$ | L=9.75-0.6 | 1 | | |
| For short cross wall | 6 | 3.35 | 0.6 | 0.6 | 7.24 $m^3$ | L=3.95-0.6 | 1 | 3 | |

SCHEME OF VALUATION

Revision : 2015 Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | | | | | | | Split up score | Sub Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Description | No | L(m) | B(m) | H(m) | Qty | Remarks | | | |
| | b) For basement | | | | | | | | | |
| | Alround the building | 1 | 43·2 | 0·45 | 0·6 | 11·66 $m^3$ | | 1 | | |
| | For Long cross wall | 2 | 9·3 | 0·45 | 0·6 | 5·02 $m^3$ | L = 9·75 − 0·45 | 1 | | |
| | For short cross wall | 6 | 3·5 | 0·45 | 0·6 | 5·67 $m^3$ | L = 3·95 − 0·45 | 1 | 3 | |
| | | | | | | 51·73 $m^3$. | | | | |
| iii) | Brick Masonry in CM 1:6 for superstructure. | | | | | | | | | |
| | a) Alround the building | 1 | 43·2 | 0·35 | 3 | 45·36 $m^3$ | | | | |
| | b) For Long cross wall | 2 | 9·4 | 0·35 | 3 | 19·74 $m^3$ | L = 9·75 − 0·35 | | | |
| | c) For short cross wall | 6 | 3·6 | 0·35 | 3 | 22·68 $m^3$ | L = 3·95 − 0·35 | 4 | | |
| | d) In toilet | 2 | 1·5 | 0·1 | 3 | 0·9 $m^3$ | | | | |
| | | | | | | 88·68 | | | | |
| | Deductions | | | | | | | | | |
| | Door D1 | 5 | 1 | 0·35 | 2 | (−) 3·5 $m^3$ | | | | |
| | D2 | 6 | 0·8 | 0·35 | 1·8 | (−) 3·02 | | | | |
| | Windows W1 | 7 | 0·9 | 0·35 | 1·2 | (−) 2·65 | | | | |
| | Opening in wash | 1 | 1·5 | 0·35 | 1·8 | (−) 0·945 | | | | |
| | Ventilators, V | 2 | 0·6 | 0·35 | 0·45 | (−) 0·189 | | 2 | 6 | 15 |
| | Verandah opening | 1 | 2 | 0·35 | 2 | (−) 1·4 | | | | |
| | Lintels: Over D1 | 5 | 1·45 | 0·35 | 0·15 | (−) 0·38 | Lintels 22·5cm on both sides | | | |
| | D2 | 6 | 1·25 | 0·35 | 0·15 | (−) 0·39 | | | | |
| | W1 | 7 | 1·35 | 0·35 | 0·15 | (−) 0·496 | | | | |
| | Verandah | 1 | 2·45 | 0·35 | 0·15 | (−) 0·13 | ∴ Deductions = 13·1 $m^3$ | | | |
| | | | | | | 75·58 $m^3$ after deductions | | | | |

| IV | Description | No | L(m) | B(m) | H(m) | Qty | Remarks | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| i) | Earthwork in excavation for Septic tank | 1 | 2·8 | 1·7 | 1·95 | 9·28 $m^3$ | H = 1·4 + 0·3 + 0·2 + 0·05 = 1·95m. | 3 | | |

SCHEME OF VALUATION

Revision : 2015 Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | | | | | | | Split up score | Sub Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Description | No | L(m) | B(m) | H(m) | Qty | Remarks | | | |
| ii) | Cement Concrete 1:3:6 | | | | | | | | | |
| | Floor and Foundation | 1 | 2.80 | 1.70 | 0.2 | $0.95\,m^3$ | | 3 | | |
| | Sloping floor | 1 | 2.00 | 0.90 | 0.05 | 0.09 | Avg thickness $= \frac{10+0}{2} = 5cm$ | 3 | 6 | |
| | | | | | | $1.04\,m^3$ | | | | |
| iii) | First class brickwork in 1:4 in septic tank | | | | | | | | | |
| | Long walls : 1st step | 2 | 2.60 | 0.3 | 0.6 | $0.94\,m^3$ | | | | |
| | 2nd step | 2 | 2.40 | 0.2 | 1.15 | 1.10 | | 3 | | |
| | Short walls : | | | | | | | | | |
| | 1st step | 2 | 0.9 | 0.3 | 0.6 | $0.32\,m^3$ | | | | |
| | 2nd step | 2 | 0.9 | 0.2 | 1.15 | $0.41\,m^3$ | | 3 | 6 | 15 |
| | | | | | | $2.77\,m^3$ | | | | |

V

i)

| Description | No | L(m) | |
|---|---|---|---|
| Steel bars including bending in reinforcement in STEM. | | | |
| 22 mm dia bars : 22 mm dia main bars @ 40cm c/c (full height) | | | L = 6.5 − top cover − bottom cover + 2 hooks + 0.75 |
| No = $\frac{30m - cover}{0.40} + 1$ | 76 | 7.53 | = 6.5 − 0.05 − 0.07 + (18 × 0.022) + 0.75 |
| $= \frac{29.90}{0.40} + 1 = 76$ Nos. | | | = 7.53m |
| | | | Total Length = 76 × 7.53 = 572.28m. |
| 22mm dia main bars upto 3.60m ht @ 40cm c/c (Remaining bars) | | | L = 7.53 − 2.40 = 5.13m |
| No = $\frac{29.90 - 2 \times 0.2}{0.4} + 1 = 75$ | 75 | 5.13 | ∴ Total Length = 75 × 5.13 = 384.75m. |
| 22mm dia main bars upto 1.80m ht @ 20cm c/c (Remaining bars) | | | L = 7.53 − 4.20 = 3.33m |
| No = $\frac{29.90 - 2 \times 0.10}{0.2} + 1 = 150$ | 150 | 3.33 | Total Length = 150 × 3.33 = 499.5m. |

Total of 22mm dia bars 1456.53m

7 @ 2.98kg = 4340.46kg

SCHEME OF VALUATION

Revision : 2015 Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | | | | | Split up score | Sub Total | Total |
|---|---|---|---|---|---|---|---|---|
| | Description | No | L | | | | | |
| | 14mm dia bars | | | | | | | |
| | 14mm dia. distributing bars right side of stem @ 25cm c/c<br>No = $\frac{6.50-0.05-0.07}{0.25}+1$<br>= 26.5 ≅ 27 Nos. | 27 | 31.52 | = 851.04 m | L = 30 − 2 Covers + 2 over laps + 6 hooks<br>= 30 − 0.10 + (2x40x0.014) + (6x9x0.014)<br>= 31.52 m (Assuming two joints) | | | |
| | 14mm dia vertical bars left side of stem @ 30 cm c/c<br>No = $\frac{30-.10}{0.30}+1$ = 101 Nos | 101 | 6.63 | = 669.63 m | L = 6.50 − Top and bottom covers + 2 hooks<br>= 6.50 − (0.05+0.07) + (18x0.014) = 6.63m | | | |
| | Total of 14mm dia bars | | | | = 1520.67m @ 1.21 kg<br>= 1840 kg | | | |
| | 10mm dia bars : 10mm dia. distributing bar left side of stem @ 30cm c/c<br>No = $\frac{6.5-0.05-0.07}{0.30}+1$<br>= 22 Nos. | 22 | 31.06 | = 687.28m | L = 30 − 2 covers + 2 over laps + 6 hooks<br>= 30 − 0.10 + (2x40x0.01) + (6x9x0.01)<br>= 31.06 m (Assuming two joints) | | | 8 |
| ii) | Base Slab | | | | | | | |
| | 10mm dia distributing bars at bottom (toe) @ 25 c/c<br>No = $\frac{(0.75+0.60+0.30)-0.05}{0.25}+1$<br>= 7 Nos. | 7 | 31.06 | = 217.42 m | Length same as above. | | | |
| | 10mm dia. distributing bars at top (heel) @ 20cm c/c<br>No = $\frac{(1.56+0.60+0.25)-0.05}{0.20}+1$<br>= 13 Nos. | 13 | 31.06 | = 403.78 | Length same as above | | | |
| | Total of 10mm dia bars | | | | = 1304.52m<br>@ 0.62 kg = 808.8 kg. | | | |

SCHEME OF VALUATION

Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|

| | Description | No | L | | |
|---|---|---|---|---|---|
| | 16mm dia bars : 16mm dia main bars at bottom (toe) @ 15cm c/c | 200 | 1.89 | =378m | L = (0.75+0.60)+0.30 −0.05 +(18×0.016) = 1.89m |
| | No = $\frac{30-0.10}{0.15}+1$ = 200 Nos | | | | |
| | 16mm dia main bars at top (heel) @ 10cm c/c | 300 | 2.74 | =822m | L = (1.65+0.6+0.25)−0.05 +(18×0.016) = 2.74m |
| | No = $\frac{30-0.10}{0.10}+1$ = 300 Nos | | | | |
| | Total of 16mm dia bars = 1200 m @ 1.58 kg = 1896 kg | | | | |
| | Grand Total of all bars = 8884.46 kg = 88.845q | | | | 7 |

| VI | Description of items | No | L (cm) | B (cm) | H (cm) | Qty | Remarks | Split up score | Sub Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| i) | Earthwork excavation in foundation | | | | | | | | | |
| | Pier | 1 | 10.4 | 2.2 | 1.35 | 30.88 | | | | |
| | Cut water end | 1 | 0.55 | 1.6 | 1.35 | 1.19 | | 3 | | 3 |
| | | | | Total | | 32.07 | Cum | | | |
| ii) | I-class brickwork in 1:5 CM | | | | | | | | | |
| | Pier : | | | | | | | | | |
| | 1st footing | 1 | 8.3 | 1.8 | 0.3 | 4.48 | | | | |
| | 2nd footing | 1 | 8.3 | 1.7 | 0.3 | 4.23 | | | | |
| | 3rd footing | 1 | 8.3 | 1.6 | 0.3 | 3.98 | | | | |
| | Above footing upto springing level | 1 | 8.3 | $\frac{1.5+0.9}{2}$ | 3.6 | 35.86 | Avg. breadth | | | |
| | Above springing trapezium portion | 1 | 8.3 | $\frac{0.9+0.5}{2}$ | 0.40 | 2.32 | Upper breadth = 50cm & ht = 40cm. | 4 | | |

SCHEME OF VALUATION

Revision : 2015 Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | | | | | | | Split up score | Sub Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Description of items | No | L(m) | B(m) | H(m) | Qty | Remarks | | | |
| | Base water end | | | | | | | | | |
| | 1st Footing | 1 | $\frac{1}{2}\times\pi\times\frac{1.8^2}{4}$ | | 0.3 | 0.38 | Area of semicircle x ht | | | |
| | 2nd Footing | 1 | $\frac{1}{2}\times\pi\times\frac{1.7^2}{4}$ | | 0.3 | 0.34 | | | | |
| | 3rd Footing | 1 | $\frac{1}{2}\times\pi\times\frac{1.6^2}{4}$ | | 0.3 | 0.30 | | | | |
| | Above footing upto springing level | 1 | $\frac{1}{2}\times\pi\times\frac{1.2^2}{4}$ | | 3.60 | 2.05 | Dia. at middle section $= \frac{1.5+0.9}{2} = 1.2$m. | 4 | | |
| | Cut-water end - | | | | | | | | | |
| | 1st footing | 1 | $\frac{1}{2}\times1.8\times1.8\times0.866$ | | (0.30) | 0.42 | Area of triangle x ht | | | |
| | 2nd footing | 1 | $\frac{1}{2}\times1.7\times1.7\times0.866$ | | 0.30 | 0.37 | Area of triangle $= \frac{1}{2}\times B\times alt = \frac{1}{2}\times B\times B\times 0.866$ | | | |
| | 3rd footing | 1 | $\frac{1}{2}\times1.6\times1.6\times0.866$ | | 0.3 | 0.33 | | | | |
| | Above footing upto springing level. | 1 | $\frac{1}{2}\times1.2\times1.2\times0.866$ | | 3.60 | 2.24 | Breadth at middle sec $= \frac{1.5+0.9}{2} = 1.2$m. | 4 | | 12 |
| | | | | | Total = | 57.3 | Cum | | | |
| VII | Length of bars : | | | | | | | | | |
| | In base of column : 10 mm dia bars at 10 cm c/c in both directions | | | | | | | | | |
| | $\therefore L = 1 - 2\times0.05 + 2$ hooks | | | | | | | | | |
| | $= 1 - 2\times0.05 + 18\times0.01 = 1.08$m | | | | | | | | | |
| | No. of rods $= \frac{1-0.1}{0.1} + 1 = 9+1 = 10$ Nos. | | | | | | | | | |
| | $\therefore$ For both directions $= 2\times10 = 20$ Nos. | | | | | | | 3 | | |

SCHEME OF VALUATION

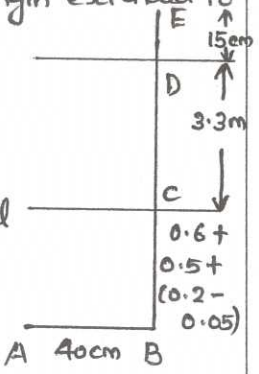
Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|

**Vertical rods** : No. of bars = 4 Nos.

Length of each bar = bent to join base + ht. of base − cover + trapezoidal portion height + basement ht + Superstructure ht + Length extended to roof.




ie, ℓ = AB + BC + CD + DE

AB = bent to join base = 40 cm

BC = (Base height − Cover) + Trapezoidal portion ht + basement height

= (20 − 5) + 50 + 60 = 125 cm

CD = Superstructure ht = 330 cm

DE = Extended length into roof = 15 cm

∴ Length of each bar = 40 + 125 + 330 + 15 = 5.1 m

**Horizontal stirrups** : 6mm ϕ

No. of stirrups = $\frac{0.15+0.50+0.60+3.3}{0.15} + 1 = \frac{4.55}{0.15} + 1$

= 31 Nos.

Length of stirrup = $4 \times [0.30 - 2 \times 0.05] + 24d$

= $4 \times 0.20 + 24 \times 0.006$ = 0.95 m

3

3

**Bar bending schedule** :

| Description of bar | Shape of bar | Dia | No. | Len | Total length | Wt | Total weight |
|---|---|---|---|---|---|---|---|
| Main rods (base slab) | 0.90 m | 10mm | 20 | 1.08 | 21.6 | 0.62 | 13.39 |
| Vertical main rods | 4.7m, 0.4 | 12mm | 4 | 5.1 | 20.4 | 0.89 | 18.16 |
| Horizontal stirrups | 0.2, 0.2, 0.2, 0.2 | 6mm | 31 | 0.95 | 29.45 | 0.22 | 6.47 |
| | | | | | Total weight = | | 38.02 ≈ 38kg |

6

15

SCHEME OF VALUATION

Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|
| VIII a) | Detailed specification for DPC 2.5cm with CC 1:1.5:3<br>Main points include i) Materials<br>ii) Mixing<br>iii) Laying<br>iv) Curing<br>v) Painting with Asphalt<br>(Explanation of above points) | | | 8 |
| b) | Detailed specification for Pointing:<br>The joints of the brickwork shall be raked out to a depth 20mm and the surface of the wall washed and cleaned and kept wet for two days before pointing.<br>The materials of mortar cement and sand, or lime and surkhi or sand or kankar lime as specified, shall be of standard specifications. Materials shall be first dry mixed by measuring with boxes to have the required proportion as specified and then mixed by adding water slowly and gradually and thoroughly mixed.<br>Mortar shall be applied in the joints slightly in excess and pressed by a proper tool of the required shape. Extra mortar if any is removed and surface finished. After pointing, the surface shall be kept wet for seven days. | 5 | | |
| | - Flush pointing<br>- Ruled pointing<br>- Weather or Struck pointing<br>- Raised or Tucked pointing | 2 | | 7 |

SCHEME OF VALUATION

| Revision : 2015 | Course Code: 5014 |
|---|---|
| Course Title : Quantity Surveying - II | |

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|
| IX a) | **Scrap Value**: Scrap value is the value of dismantled materials. For a building when the life is over at the end of its utility period the dismantled materials such as steel, bricks, timber etc will fetch a certain amount which is the scrap value of the building. Estimated value of scrap value is about 10% of construction cost. | 2 | | |
| | **Salvage Value**: It is the estimated value of property at the end of its life period without being dismantled. Salvage value of a building may be increased by renovation. | 2 | | |
| | **Market Value**: The local prevailing rate of property at particular time is called Market value of that property whenever put for sale. It differ from time to time according to demand and supply, changes in industry, means of transport, cost of material and labour etc. | 2 | | 6 |
| b) | Annual Rent = $3500 \times 12$ = Rs. 42,000/- | | | |
| | Total outgoings = $0.25 \times 42,000$ = Rs. 10,500/- | | | |
| | Net annual income = $42,000 - 10,500$ = Rs. 31,500/- | | | |
| | Assuming 8% interest on capital and 6% on redemption | | | |
| | $I_c = \frac{i}{(1+i)^n - 1} = \frac{0.06}{(1+0.06)^{40} - 1} = 0.00646$ | | | |
| | Years purchase for 40 years $= \frac{1}{(0.06 + 0.00646)} = 15.046$ | | | |
| | Capital value = Rs. $31,500 \times 15.046 = 4,73,949$/- | | | |
| | Present value of land = $300 \times 1000 = 3,00,000$/- | | | |
| | Deferred value of land $= \frac{3,00,000}{(1+0.06)^{40}}$ = Rs. 29,167/- | | | |
| | Total value of property = $4,73,949 + 29,167 = 5,03,116$/- | | | 9 |
| | ie, it can be sold for Rs. 5,03,116/- | | | |

SCHEME OF VALUATION

| Revision : 2015 | | | | Course Code: 5014 |
|---|---|---|---|---|
| Course Title : Quantity Surveying - II | | | | |
| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
| X | | | | |
| a) | Total cost of building, C = Rs. 9,00,000/-<br>Depreciation period, = 25 years<br>Scrap value, S = Rs. 80,000/-<br>Life of building, n = 80 years<br>Annual depreciated cost (by straight line method)<br>$= \frac{\text{Original Cost} - \text{Scrap value}}{\text{Life in years}}$<br>$= \frac{9,00,000 - 80,000}{80} = \text{Rs. } 10,250/-$<br>Depreciation for 25 years = 10,250 × 25 = Rs. 2,56,250/-<br>∴ Value of building after 25 years = 9,00,000 − 2,56,250<br>= Rs. 6,43,750/- | 3 | | |
| | Constant Percentage method:<br>Percentage rate of annual depreciation,<br>$P = 1 - \left(\frac{S}{C}\right)^{1/n} = 1 - \left[\frac{80,000}{9,00,000}\right]^{1/80}$<br>$= 0.03$<br>Depreciated cost for 25 years = (Rs. 9,00,000 − 9,00,000 × 0.03 × 25)<br>= Rs. 2,25,000/- | 3 | | 6 |
| b) | Net return required on land per annum<br>$= 20,000 \times \frac{5}{100} = \text{Rs. } 1000/-$<br>Net return required on building per annum<br>$= 80,000 \times \frac{8}{100} = \text{Rs. } 6400/-$<br>Total net return per annum = Rs. 7400/- | 2 | | |

SCHEME OF VALUATION

Revision : 2015 | Course Code: 5014

Course Title : Quantity Surveying - II

| Qst. No. | Scoring Indicator | Split up score | Sub Total | Total |
|---|---|---|---|---|
| | Expenditure on outgoings per annum:<br>Annual repair @ 1% on cost of building<br>$= 80,000 \times \frac{1}{100} =$ Rs. 800/- | 1 | | |
| | Sinking fund at 4% for 60 years on 90% of building cost<br>$= 80,000 \times 90\% \times 0.42$<br>$= 80000 \times 0.9 \times 0.42$ (0.42% – amt of sinking fund per annum of Rs.100)<br>$=$ Rs. 302.40/- | 2 | | |
| | Other outgoings at 30% of net return on building<br>$= 6400 \times 0.30 =$ Rs. 1920/- | | | |
| | ∴ Total expenditure on outgoings per annum<br>$=$ Rs. 3022.40/- | 2 | | |
| | Gross rent = Net return + outgoings<br>$= 7400 + 3022.40 =$ Rs. 10422.40/- per annum | | | |
| | Standard rent per month $= \frac{10422.40}{12} = 868.53$ | | | |
| | Standard rent per flat per month $= \frac{868.53}{4}$<br>$=$ Rs. 217.13/- | 2 | | 9 |

**CODE :** 5014

**COURSE:** QUANTITY SURVEYING-II **VERSION:** 2015.

**BLUE PRINT**

| Sl No. | Module | Type of Questions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Part A | | Part B | | Part C | | Total | |
| | | No. of Questions | Score | No. of Questions | Score | No. of Questions | Score | No. of Questions | Score |
| 1 | FIRST | 1 | 2 | 2 | 12 | 2 | 30 | 5 | 44 |
| 2 | SECOND | 1 | 2 | 1 | 6 | 2 | 30 | 4 | 38 |
| 3 | THIRD | 1 | 2 | 2 | 12 | 2 | 30 | 5 | 44 |
| 4 | FOURTH | 2 | 4 | 2 | 12 | 2 | 30 | 6 | 46 |
| Total | | 5 | 10 | 7 | 42 | 8 | 120 | 20 | 172 |

## QUESTION WISE ANALYSIS

**COURSE** : QUANTITY SURVEYING - II (5014)

**VERSION** : 2015

| Qn No. | Specific outcome (*as per syllabus*) | Module | Content Details | Score | Time in Minutes |
|---|---|---|---|---|---|
| I 1. | 1.1.0 | 1 | Diff. items involved in tiled roof | 2 | 2 |
| 2. | 2.1.0 | 2 | Diff. items associated with culverts, | | 2 |
| | | | bridges & retaining wall | 2 | |
| 3. | 3.1.2 | 3 | Estimate bar bending schedule | 2 | 2 |
| 4 | 4.1.1 | 4 | Define the terms | 2 | 2 |
| 5. | 4.1.1 | 4 | Define the terms | 2 | 2 |
| II 1. | 1.1.1 | 1 | Estimate diff. items in RCC building | 6 | 6 |
| 2 | 1.1.2 | 1 | Estimate Septic Tank & Soak pit | 6 | 4 |
| 3. | 2.1.1 | 2 | Estimate pier of bridge | 6 | 3 |
| 4 | 3.2.2 | 3 | Detailed specifications | 6 | 6 |
| 5. | 3.1.1 | 3 | Quantities for RCC Column | 6 | 5 |
| 6. | 4.1.2 | 4 | Explain diff. methods of valuation | 6 | 6 |
| 7. | 4.1.2 | 4 | Explain the factors, diff methods | | 5 |
| | | | of valuation | 6 | |
| III | 1.1.1 | 1 | Estimate diff. items in RCC buildg | 15 | 20 |
| IV | 1.1.2 | 1 | Estimate Septic Tank & Soak pit | 15 | 20 |
| V | 2.1.1 | 2 | Estimate of RCC Retaining wall | 15 | 20 |
| VI | 2.1.1 | 2 | Estimate pier of bridge | 15 | 20 |
| VII | 3.1.1 | 3 | Estimate RCC Column | 15 | 20 |
| VIII | 3.2.2 | 3 | Detailed specifications | 15 | 20 |
| IX | 4.1.1 & 4.1.3 | 4 | Define the terms, rent of a | | |
| | | | building. | 15 | 15 |
| X | 4.1.2 & 4.1.3 | 4 | Rent fixation & Deduce the | | |
| | | | value of a property. | 15 | 20 |
| | | | | | |
| **Total Time** | | | | | 200 |