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| **LOGO**  **Scheme of Valuation/Answer Key**  (Scheme of evaluation (marks in brackets) and answers of problems/key) | | | | | | |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  V SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018 | | | | | | |
| **Course Code: CE305** | | | | | | |
| **Course Name: GEOTECHNICAL ENGINEERING - II** | | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | | |
| **\*\*Please see the suggestions,recommendations at page2-3** . | | | | | | |
| **PART A** | | | | | | |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | | | Marks | |
| 1 | a) | Any Three assumptions (e.g., point load, at surface, elastic, isotropic, semi-infinite, weightless) | | | (1+1+1 ) | |
|  | b) | Equation + steps for substitution+ Answer (2.13kN/m2) | | | (3+2+3 ) | |
|  | c) | Two main differences | | | (2+2 ) | |
| 2 | a) | Definition with fig + dependence of movement of wall | | | (2+2 ) | |
|  | b) | Earth press coe + diagram +steps+Answer(144 kN/m) | | | (1+1+3+3) | |
|  | c) | Use of Newmark’s chart + procedure | | | (2+1) | |
| 3 | a) | Definition + derivation | | | 2+2 | |
|  | b) | Earth press coe + diagram +steps+Answer (59.5kN/m) | | | 1+2+2+3 | |
|  | c) | Definition of isobar + significance | | | (2+1) | |
| **PART B** | | | | | | |
| ***Answer any two full questions, each carries 15 marks.*** | | | | | | |
| 4 | a) | Four differences between general and local shear failure | | | (1+1+1+1 ) | |
|  | b) | Equation+ substitution+Answer (354 kN) | | | (2+2+3 ) | |
|  | c) | Fig. Of well + marking of components | | | ( 2+2) | |
| 5 | a) | Safe bearing capacity definition + allowable bearing capacity definition | | | (1.5+1.5) | |
|  | b) | Equation+ WT correction factors+ substitution + Answer (1502 kPa) | | | (2+1+2+3) | |
|  | c) | 2 criteria | | | (2+2) | |
| 6 | a) | Sketch + determination of point of Resultant load +length fixation +width fixation | | | (2+2+2+2) | |
|  | b) | Two problems(shift, tilt etc)+ any 2 remedial measures | | | (1+3) | |
|  | c) | Any three limitations | | | (1+1+1) | |
| **PART C** | | | | | | |
| ***Answer any two full questions, each carries20 marks.*** | | | | | | |
| 7 | a) | Equation+substitution+Answer (804kN) | | | | (2+1+2 ) |
|  | b) | Five objectives- one mark for each | | | | (5) |
|  | c) | Explanation of negative skin friction + its effects | | | | (3+3) |
|  | d) | Mentioning the two corrections mentioned in IS code | | | | (2+2) |
| 8 | a) | Three points | | | | (3) |
|  | b) | Two advantages | | | | (2+2) |
|  | c) | Equation + substitution + Answer (2160kN) | | | | (3+3+2) |
|  | d) | Formula + each term | | | | (3+2) |
| 9 | a) | Vibration isolation + two methods | | | | (1+2) |
|  | b) | Equation + substitution + Answer (112.85cps) | | | | (2+2+1) |
|  | c) | Pile load test procedure+ fig of test arrangement+ load-settlement curve+ ultimate load determination | | | | (4+3+2+3) |
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**\*\***Recommendations for the scheme, comments on scheme of CE 305, Geotechnical Engineering II

Fifth Semester B. Tech Examination.

1 b) In the Qp, γ = 2.54 cm but r may be taken as 2.5m to be realistic, so credit has to be given for both.

2b) Only active thrust is required.

3b) Only active thrust is required.

4b) Nc, Nq and Nγ values are given Qp and may be taken as such. For ø = 300 , bearing capacity factors are different, full credit has to be given for if a student taken those from the chart.

5b) As per KTU syllabus given full credit either ultimate bc or net bc.

Rw = R’w= 0.5, unit weight of water = 9.81kN/m3 or 10 kN/m3.

6 a) By taking distance of edge of footing from center line of column A= 0.5m,

Answer: length of footing required: 6.714m and width of footing required: 1.115m

Full credit shall be given for any distance of edge of footing from center line of column A between 0.2m and 0.5m.

7 a) Length of pile may be taken as 15m or less than 15m.

9 b) ω = 112.85 rad/sec or 17.96 cps.

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