USN *

11

Multiple Choice Questions- 1 Mark

Answer the multiple Choice Questions each carrying 1 mark. No negative marking

The modulus of subgrade reaction is the pressure corresponding to plate settlement of *

◉ 0.125 cm

○ 0.25 cm
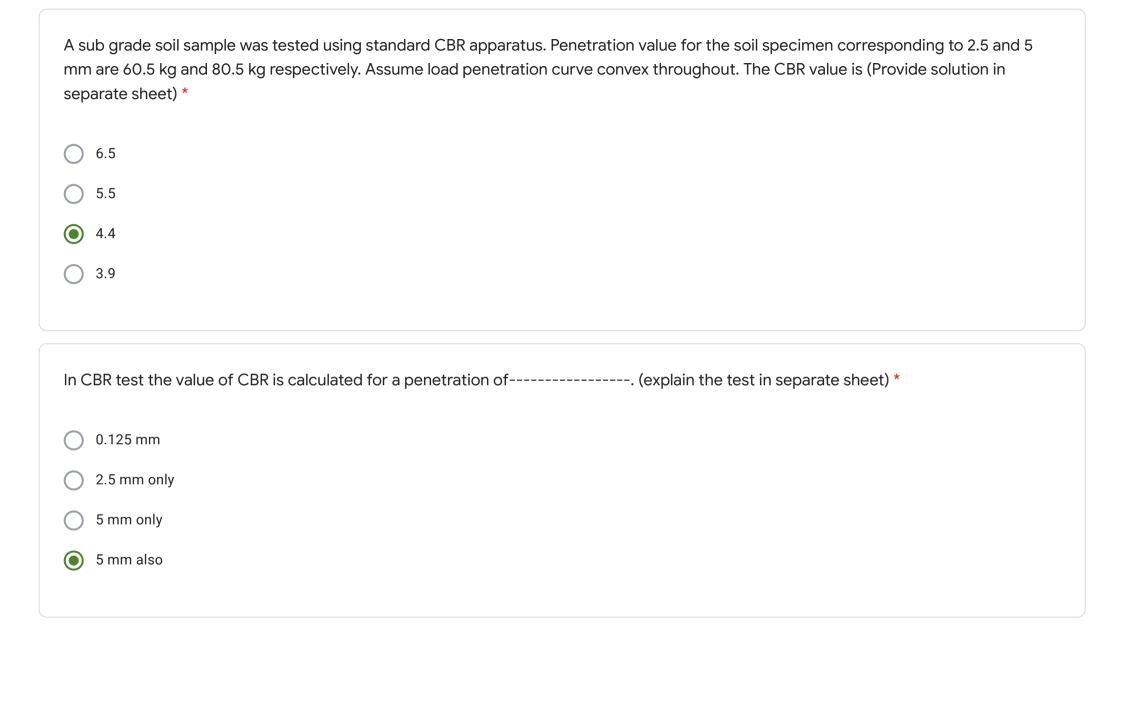
○ 0.375 cm

○ 0.7 cm

Specific gravity of good road aggregate is *

○ 2.6 to 2.9

○ 1.2 to 1.8

○ None

○ Can be anything

Los Angeles abrasion test is *

○ Abrasion test only

○ Abrasion and impact test

○ strength test

○ none

Bitumen emulsion contains *

- ◉ Bitumen+water+Emulsifying agent
- ○ Bitumen+oil+cutback
- ○ Bitumen+water
- ○ Bitumen + water +tar

Flash and fire point test is done using *

- ○ Ring and ball tgest
- ◉ Pensky marteen closed cup test
- ○ Both
- ○ None

Contact pressure *

○ Same as tyre pressure

○ same as inflation pressure

● load on the wheel/ contact area

○ None

The standard load corresponding to 2.5 mm penetration for standard aggregate in CBR test is *

○ 1372 kg

● 1370kg

○ 2056 kg

○ 1376 kg

The standard load corresponding to 5 mm penetration for standard aggregate in CBR test is *

- ( ) 1372 kg
- ( ) 2050 kg
- (●) 2056 kg
- ( ) 1376 kg

Can CBR be more than 100% *

- (●) Yes
- ( ) No

CBR test is an *

○ shear resistance test

⦿ arbitrary strength test

○ rationalistic strength test

○ impact test

Multiple Choice Questions-2 marks

No negative marking. All the answers must be explained in a separate sheet and uploaded in google classroom

Sub grade is ----------------. (Explain the subgrade function in separate sheet) *

○ Lowest layer of pavement

○ Natural earth surface

⦿ Both

○ None

A sub grade soil sample was tested using standard CBR apparatus. Penetration value for the soil specimen corresponding to 2.5 and 5 mm are 60.5 kg and 80.5 kg respectively. Assume load penetration curve convex throughout. The CBR value is (Provide solution in separate sheet) *

○ 6.5

○ 5.5

⦿ 4.4

○ 3.9

In CBR test the value of CBR is calculated for a penetration of----------------. (explain the test in separate sheet) *

○ 0.125 mm

○ 2.5 mm only

○ 5 mm only

⦿ 5 mm also

More angularity number suggests---------- (explain the significance of angularity number in separate sheet) *

○ less void

○ doesnot depend on

○ it can be both

⦿ More void

More angularity number suggests.................. (Define angularity number in separate sheet) *

○ Strong aggregate

⦿ Weak aggregate

○ medium aggreagate

○ Cant be said

The grade of bitumen preferred in hot climate.... ....(Explain the bitumen test conducted to find grade of aggregate in a separate sheet)
*

○ 100/20

○ 100/400

○ 80/100

◉ 30/40

For flexible pavement............. (differentiate between flexible and rigid pavement) *

○ Pavement design is based on flexural strength

◉ Pavement design is based on sub grade strength

○ Both

○ None

Soundness test is done to know………. (Explain soundness test of aggregates in separate sheet) *

○ durability

○ strength against weathering action

◉ Both

○ None

The combined value of flakiness and elongation index is determined for a sample aggregate. The sequence in which the two tests are conducted is------------------ (explain the elongation index and flakiness index in separate sheet) *

○ elongation index test followed by flakiness index for whole sample

○ flakiness index test followed by elongation index for whole sample

○ elongation index test followed by flakiness index for non elongated aggregate sample

◉ flakiness index test followed by elongation index for non flaky aggregate sample

Strong aggregate gives------------- (Explain the crushing strength of aggregates in a separate sheet) *

◉ low crushing value

◯ high crushing value

◯ cant be said

◯ None

Multiple Choice Questions-5 marks

No negative marking. Upload answer sheet in google classroom

what is the equivallent single wheel load of a dual wheel assembly carrying 20440 N each for pavement thickness of 20 cm? Centre spacing of tyres 27 cm and distance between the walls of the tyres is 11 cm (explain in separate sheet) *

○ 27600 N

○ 32400 N

○ 40880 N

● 30190 N

The speed of overtaking and overtaken vehicle is 80 kmph and 50 kmph respectively. The acceleration of overtaking vehicle is 2.5 km/hr/sec. Spacing of vehicle = 16 m. Reaction time of driver 2 sec. Calculate safe OSD on one way traffic road. (Explain in separate sheet) *

The load penetration data from a California Bearing Ratio (CBR) test is provided in the following table. Indicate whether any correction is required for the calculated CBR value. Find the CBR value of the soil from the data provided.

Table : Load penetration data

Penetration (in 'mm')	0	0.5	1.0	1.5	2.0	2.5	3.0	4.0	5.0	7.5	10	12.5
Load in kgf (kg force)	0	4	13	29	40	50	58	70	78	93	103	112

- ○ 3.64
- ● 3.79
- ○ 5.21
- ○ None

In a dual wheel assembly if P is equal to each wheel load S is center to center spacing of dual wheels, and d is clear distance between wheels, then the ESWL for a depth between d/2 and 2S is-------------------- (Explain ESWL method with figure in a separate sheet) *

○ P

○ 2P

◉ Between P and 2P

○ Cant be said

Modulus of subgrade reaction using 30 cm plate is obtained as 200 N/Cm3. The value of the same using standard plate is -------------. (Explain plate load test in a separate sheet) *

◉ 100 N/cm3

○ 200 N/cm3

○ 150 N/cm3

○ 50 N/cm3

This form was created inside of CMR Institute of Technology.

Google Forms