

175

30/11/17.

Sem V CIVIL, CBSS, Dec-17
T E I

Q. P. Code:-24402

(3 Hours)

[Marks:80]

- Note:
- i. Q. No. 1 is compulsory
 - ii. Attempt any 3 out of remaining 5
 - iii. Support all theory and numerical with neat sketch

1. A Calculate corrected runway length for basic runway length of 4100 meter at an airport site located at 150m above M.S.L. The airport reference temperature is 32.30° C and standard atmospheric temperature is 33.80° C. consider site is horizontal. Also draw layout of airport with scale of 1cm = 500m use corrected runway length. Take airport area of 4 km x 3 km and show all airport elements, Assume wind is calm in all the direction throughout the year. (10 M)
- B Write a note on (any 2) (10 M)
 - i Requirements of harbor.
 - ii Theories of creep,
 - iii Tram-line method of laying railway Line.
2. A What is ANC and TNC? Design 1 in 8.5 turnout on B.G track which takes off from toe and passes through TNC. Assume heel divergence as 11.4cm. (08 M)
- B Discuss classification of airport as per ICAO (06 M)
- C Discuss on various ballast materials. (06 M)
3. A Design an exit taxiway connecting runway and parallel taxiway for total angle of turning as 35° . Turning speed is 80kmph, take coefficient of friction as 0.12. assume any other data if required. (08 M)
- B Discuss Instrumental landing system with sketch. (06 M)
- C Write note on airport drainage. (06 M)
4. A Discuss characteristics of Concrete, Timber and cast-iron sleepers on basis of suitability, durability, cost and weight. (08 M)
- B What are Special Breakwaters? (06 M)
- C Discuss on airport lighting. (06 M)
5. A Explain Negative Super elevation with neat sketch and find the speed on main curve if a 5° curve diverges from a 3° main curve on a B.G yard assuming the speed of branch line is 35 kmph. (08 M)
- B Explain dry docks and also compare ports and harbor. (06 M)
- C Explain marshalling yard. (06 M)

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6. A Design the number of gates to serve three classes of aircraft for obtaining Combined (05 M)
handling capacity of all the gates as 20 aircrafts per hour. Use following data, assuming
that each gate is available for all the aircrafts class assume any other suitable data if required

Aircraft class	Mix (%)	Average Occupancy Time (min)
1	15	25
2	35	45
3	50	60

B. Write note on any 3

- i. Types of rails.
- ii. Konkan railway
- iii. Dolphin
- iv. Fenders
- v. 3 controls of aircraft.
