

KADI SARVA VISHWAVIDHYALAYA

BE V SEMESTER EXAMINATION (NOV/2016)

SUBJCT CODE: CV 505

SUBJECT NAME: RAILWAY, BRIDGE AND TUNNEL ENGINEERING

DATE: 19/11/2016

TIME: 10.30 AM TO 1.30 PM

TOTAL MARKS: 70

INSTRUCTIONS:

1. Answer each section in separate Answer book
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate clearly the options you attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

SECTION: I

Q : 1 (ALL COMPULSORY)

- (A) Discuss the merits of railway transport over the highway transport. 05
(B) A 5° curve diverges from a 3° main curve in reverse direction in the layout of a B.G. track yard. If the speed on the branch line is restricted to 35 kmph. Determine the restricted speed on the main line. 05
(C) State different types of surveys conducted before fixing railway alignment. Explain any two in detail. 05

OR

- (C) Draw a typical sketch of cross-section of B.G. track for double line in cutting and show its components. 05

Q : 2 Answer the following questions.

- (A) Illustrate the various types of rail failures with sketches. 05
(B) Write down requirement of good ballast. 05

Q : 2

OR

- (A) Why the uniformity of gauges is desirable in any country? Explain with sketch 'Loading Gauge'. 05
(B) What is the function of rails? Explain the various types of rails in use. 05

Q : 3 Answer the following questions.

- (A) Explain various gradients used on Indian railways. Explain any two. 05
(B) Write short note on : Water column, Turn table. 05

Q : 3

OR

- (A) Give the classification of railway signals based on different characteristics 05
(B) Enlist different methods of interlocking and explain essential principle of interlocking. 05

SECTION: II

Q : 4 (ALL COMPULSORY)

- (A) Briefly explain various types of loads on a bridge. 05
(B) The fooling are the cost of one pier and one super structure span of multiple span bridge for various span lengths. The cost of super structure span excludes the cost of railing and flooring system. Calculate the economic span. 05

Span (m)	4	8	12	15
Cost of super structure (Rs.)	1700	7000	16000	24500
Cost of sub structure (Pier)(Rs.)	22200	23200	23000	23600

- (C) State the order of erection of suspension bridge. 05

OR

- (C) Explain : Scour depth, vertical clearance of a bridge site 05

Q : 5 Answer the following questions.

- (A) Draw a neat sketch of bridge and show its components and also give importance of each component. 05
(B) Write down various defects in bridge and explain any two remedial measures of bridge in detail. 05

Q : 5

OR

- (A) What is the importance of shafts in tunneling? Describe with sketches various operations involved in construction of shafts. 05
(B) Write short note on: Maintenance of bridges. 05

Q : 6 Answer the following questions.

- (A) Explain with neat sketch commonly adopted shape of tunnels. 05
(B) What are the factors affecting the choice of method to soft ground. 05

Q : 6

OR

- (A) Enlist different types of drainage systems and explain temporary drainage systems. 05
(B) Write purpose and requirements of a ventilation in tunneling. 05

All the Best

KADI SARVA VISHWAVIDHYALAYA

BE SEMESTER: 5TH

EXAMINATION (NOV/2015)

SUBJCT CODE: CV 505

SUBJECT NAME: Railway, Bridge and Tunnel Engineering

DATE: 28/11/2015

TIME: 10.30 TO 1.30 p.m.

TOTAL MARKS: 70

INSTRUCTIONS:

1. Answer each section in separate Answer book
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate clearly the options you attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

SECTION: I

Q : 1 (ALL COMPULSORY)

- (A) What will be equilibrium cant on a M.G. track of 4' Curve for a speed of 45kmph? What would be the maximum permissible speed after allowing the maximum cant deficiency? 05
- (B) Describe in brief the basic requirements of a good alignment. 05
- (C) Write short note on: Track modulus. 05

OR

- (C) Enumerate various causes of creep. 05

Q : 2 Answer the following questions.

- (A) Compare rail transportation with road transportation. 05
- (B) Compare wooden sleeper of C.I. sleeper 05

OR

- (A) Write function and requirement of ballast. 05
- (B) Explain functions of various fittings. 05

Q : 3 Answer the following questions.

- (A) Write objectives of signalling and interlocking. 05
- (B) Which type of facilities required at railway station. 05

OR

- (A) Draw a neat sketch of simple left hand turnout and show its various components parts. Explain the working principle of the turnout. 05
- (B) Write short note on: Semaphore signals. 05

SECTION: II

Q : 4 (ALL COMPULSORY)

- (A) Give list of data to be collected for location of bridge site. 05
(B) Enlist various methods of tunneling in rock with merits and demerits of it. 05
(C) Give purpose and necessity of the inspection report. 05

OR

- (C) Define the terms ; Afflux, free board, scour, span of bridge, linear water way 05

Q : 5 Answer the following questions.

- (A) Draw a neat sketch of bridge and show its components. 05
(B) State the functions of bearings and also explain rocker and roller bearings. 05

OR

- (A) Discuss erection of suspension bridge. 05
(B) Briefly explain various types of loads and stresses acting on a bridge. 05

Q : 6 Answer the following questions.

- (A) State the advantages of tunnels and horse shoe shape section of tunnels. 05
(B) Explain needle beam method of tunneling with neat sketch. 05

OR

- (A) What is dust control in tunnel? Explain various methods of dust control. 05
(B) What are the causes of accidents in tunnel? Suggest suitable preventive measures. 05

All the Best

KADI SARVA VISHWAVIDHYALAYA

BE SEMESTER: 5TH

EXAMINATION (NOV/2014)

SUBJECT CODE: CV 505

SUBJECT NAME: RAILWAY, BRIDGE AND TUNNEL ENGINEERING

DATE: 22/11/2014

TIME: 10.30 TO 1.30

TOTAL MARKS: 70

INSTRUCTIONS:

1. Answer each section in separate Answer book
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate clearly the options you attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

SECTION: I

Q : 1 (ALL COMPULSORY)

- (A) Compare railway transportation with road transportation. 05
- (B) Draw a detailed sketch showing cross section of a B.G. track for single line and double line. 05
- (C) What would be equilibrium cant on a M.G. track of 6 curves for a speed of 50 kmph. 05
What would be the maximum permissible speed after allowing the maximum cant deficiency?

OR

- (C) State different types of surveys conducted before fixing railway alignment. Explain any two in detail. 05

Q : 2 Answer the following questions.

- (A) Explain various functions of fittings or fastenings. 05
- (B) Compare characteristics of wooden sleepers and Reinforced concrete sleepers used in Indian Railways. 05

OR

- (A) State the effects of creep 05
- (B) What is the function of rails? Explain the various types of rails in use. 05

Q : 3 Answer the following questions.

- (A) Explain various gradients used on Indian railways. 05
- (B) Write short note on : Water column, Turn table 05

OR

- (A) Explain semaphore signal with sketch. 05
- (B) Draw a neat sketch of a diamond crossing in railways and list its important features. 05

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SECTION: II

(MCQ'S) (MATERIALS)

Q : 4 (ALL COMPULSORY)

- (A) Briefly explain various types of Forces acting on a bridge. 05
(B) Derive and expressions for "economic span "and write assumptions made. 05
(C) Briefly explain various types of loads on a bridge. 05

OR

- (C) Give causes of scouring and precautions to prevent scour. 05

Q : 5 Answer the following questions.

- (A) Draw a neat sketch of bridge and show its components. 05
(B) Write a short note suspension bridge. 05

OR

- (A) How are shafts classified? 05
(B) Describe with sketches procedure of fixing alignment in short and long tunnel. 05

Q : 6 Answer the following questions.

- (A) Define : Afflux ,Free board 05
(B) Classify tunnels based on a shape 05

OR

- (A) Explain Needle beam method for tunneling with neat sketch. 05
(B) Discuss with sketches ventilation in tunnel construction. 05

All the Best

KADI SARVA VISHWAVIDHYALAYA

BE SEMESTER: 5TH (ATKT)

EXAMINATION (April/2015)

SUBJCT CODE: CV 505

SUBJECT NAME: RAILWAY, BRIDGE AND TUNNEL ENGINEERING

DATE: 24/04/2015

TIME: 10.30 TO 1.30 pm

TOTAL MARKS: 70

INSTRUCTIONS:

1. Answer each section in separate Answer book
2. Use of scientific Calculator is permitted.
3. All questions are compulsory.
4. Indicate clearly the options you attempted along with its respective question number.
5. Use the last page of main supplementary for rough work.

SECTION: I

Q : 1 (ALL COMPULSORY)

- (A) Compare different modes of transportation. 05
(B) Draw a detailed sketch showing cross section of a M.G. track for single line and double line. 05
(C) What would be equilibrium cant on a M.G. track of 4 curves for a speed of 40 kmph. What would be the maximum permissible speed after allowing the maximum cant deficiency? 05

OR

- (C) What is Uniformity of gauges .Explain factors affecting selection of railway gauge 05

Q : 2 Answer the following questions.

- (A) Explain various functions of fittings or fastenings. 05
(B) Illustrate the various types of rail failures with sketches 05

OR

- (A) Explain the coning of wheels with neat sketch 05
(B) What is the function of rails? Explain the various types of rails in use. 05

Q : 3 Answer the following questions.

- (A) Define the terms: Ruling gradient ,pusher gradient 05
(B) Write short note on : Equilibrium cant, Cant deficiency 05

OR

- (A) Classify the railway stations. 05
(B) Define interlocking. Explain essential regulations of inter locking in Indian Railways. 05

SECTION: II

Q : 4 (ALL COMPULSORY)

- (A) Define the terms : Afflux, Free board, Linear water way 05
(B) Draw a neat sketch of bridge and show its components. 05
(C) State the functions of bearings and also explain rocker and roller bearings. 05

OR

- (C) Give the causes of scoring 05

Q : 5 Answer the following questions.

- (A) Describe with sketches procedure of fixing alignment in long tunnels. 05
(B) Write a short note suspension bridge. 05

OR

- (A) Write short note on : Maintenance of bridges 05
(B) State the advantages of tunnels. 05

Q : 6 Answer the following questions.

- (A) Discuss with sketch : erection of bridge 05
(B) Enlist various methods of tunneling in hard rock. Explain them with sketches. 05

OR

- (A) Why is lighting necessary in tunnel? Various types of tunnel light, Describe. 05
(B) Discuss with sketches, drainage and safety measures in tunnel construction. 05

All the Best