

NOTIFICATION
Written test and interview for Ph.D. admission in the
Department of Civil Engineering
(Specialization: Transportation Engineering)

The schedule for written test and interview is as under:

Venue, Date & Time of Written test	Venue, Date & Time of Interview (only for written test qualified candidates)
Department of Civil Engineering. 14th October, 2019 10:00 AM to 11:00 AM	Department of Civil Engineering. 15th October, 2019 09:00 AM onward

You are required to report in person for Written Test and Interview at least 30 minutes before the above schedule at **Conference Room, Civil Engineering Department.**

Important Instructions:

1. If you are having your own valid fellowship i.e. CSIR/UGC JRF/INSPIRE/DBT/ICMR etc, please bring the self-attested copy of the same.
2. Copy of your project/dissertation/research articles published may be brought at the time of interview, if available.
3. You are required to bring with you a hard copy of a 500 word STATEMENT OF PURPOSE related to the research proposal you intend to pursue.
4. **Other original documents/testimonials are not required at the time of written/interview.**
5. Please note that TA will be provided to attend the interview and/or written test (as mentioned in <https://www.iitr.ac.in/admissions/pages/Phd.html>). Kindly check this website and download the TA form. Submit the filled TA form along with relevant documents in the department office.
6. Accommodation will be provided in hostels subject to availability. Candidates may directly contact the individual hostels for accommodation.
7. Further, no request for change of date(s) and/or time for Interview/Written Test will be entertained under any circumstances.

Chairman, DRC

Head of the Dept.

Syllabus for the written test for Ph.D. admission (Spring Semester 2019-20) to be held on 14th October, 2019

The candidate can select any Section i.e. Section (A) or Section (B) depending upon his/her intended area of research. The syllabi of these sections are given below:

Section (A): Materials and Pavements

Materials:

Stone Aggregates –Origin, Physical, mechanical and durability properties of aggregates, desirable properties of aggregates for road construction, adhesion property.

Soil – Soil classification and its systems, Manual identification tests, desirable properties of soil for road construction, Important of soil subgrade, problems in soil subgrade, sub-soil drainage, soil stabilization, Strength properties of soils.

Bitumen –Bitumen sources and manufacturing, bitumen constituents, structure and rheology, types of bituminous binders, properties of bitumen, bitumen grading system, tests on bitumen, Bitumen emulsions and characteristics, tests on bitumen emulsions, Cutback bitumen, durability of bitumen, adhesion of bitumen, modified bitumen, tests on modified bitumen, separation test.

Pavements:

Components of pavement structure, functions of subgrade, subbase, base course and wearing course.

Bituminous Mixes –Desirable properties of bituminous mixes for bound & unbound base courses and wearing course in accordance with MoRTH specifications, Design of bituminous mixes, fillers. Cold mix, Warm mix and Hot mix asphalt, Durability properties of bituminous mixes.

Flexible Pavements –Design approach, Elastic layer theory, Stresses in flexible pavements, Design of pavement as per IRC 37-12, Reclaimed asphalt pavement design, Flexible overlays and determination of overlay thickness by Benkelman Beam.

Rigid pavements –Components of rigid pavements, types of joints, dowel and tie bars and their design, wheel load stresses, temperature stress, warping stress, design of rigid pavements based on IRC: 58, Dry lean concrete, Concrete block pavements, Types of cement, physical and mechanical properties of cement, Factors affecting concrete mix design, Design of concrete mixes.

Section (B): Traffic Engineering and Transportation Planning

Transportation Infrastructure: Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments;

Traffic Engineering: Elements of traffic engineering, traffic stream characteristics, Traffic studies on flow, speed, travel time - delay and O-D study, PCU, peak hour factor, parking study, accident study and analysis, black spot identification, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Traffic regulations and control systems, signal design by Webster's method; Types of intersections and channelization; Highway capacity and level of service of rural highways and urban roads.

Transportation Planning: Travel demand estimation, data need and sources, survey methodology, trip generation, trip distribution, mode choice, route assignment, random utility models, sustainable transportation – Walk, Bicycle and Public Transport, type and characteristics of urban mass transit systems

**Shortlisted Candidates for PhD Interviews: Transportation Engineering
(Spring 2019-2020)**

Sl No.	AppID	Full Name
1	RPHD19000058	AKSHAY GUPTA
2	RPHD19005251	ADITYA SHARMA
3	RPHD19000753	NUSRAT ALI
4	RPHD19001654	SHUBHAM GUPTA
5	RPHD19004757	NONGMAITHEM ROBINSON SINGH
6	RPHD19001936	ABHAY KANDPAL
7	RPHD19003449	K.NITHEESH
8	RPHD19003875	SANJIT SRIVASTAVA
9	RPHD19003163	SAIMATUN NISA
10	RPHD19002676	DEEPAK AWASTHI
11	RPHD19000950	MADHU SUDAN
12	RPHD19001792	AYANA GHOSH
13	RPHD19000228	RUPAM SAM
14	RPHD19003752	NITESH AMBERIA
15	RPHD19002921	ATIF HUSSAIN
16	RPHD19001984	ABHITESH SACHDEVA
17	RPHD19003588	SHUBHRAJYOTI CHAKRABORTY
18	RPHD19002333	ALLU AYYAPPA REDDY
19	RPHD19002254	PADADE PRANAY DNYANESHWAR
20	RPHD19005018	NIKHIL KUMAR
21	RPHD19000243	ABHINANDAN
22	RPHD19001140	SUDARSHAN VIJAYKUMAR JORE
23	RPHD19001053	VIKRAM SINGH
24	RPHD19005148	VIVEK KUMAR
25	RPHD19000900	BIPIN KUMAR GAUTAM
26	RPHD19002782	DINESH KUMAR
27	RPHD19003593	ASHWANI BOKADIA
28	RPHD19002769	BHAWANA VERMA
29	RPHD19003330	KSHITIJ JASSAL
30	RPHD19002264	RAVI KUMAR
31	RPHD19000223	SHIVACHETHAN V
32	RPHD19003313	VAIBHAV JAIN
33	RPHD19003391	ANKIT KUMAR
34	RPHD19004405	DHANUNJAYA ETURI
35	RPHD19005191	SHAILENDRA SINGH YADAV
36	RPHD19003064	SUMIT KUMAR
37	RPHD19002868	NIKHIL KUMAR
38	RPHD19003143	MOHD YASEEN