



SD-6713

B. Arch. - III (Sem. - V) Examination

May / June - 2011

BMC - V : Paper - AR - 503

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृशावेव निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
B. Arch. - 3 (Sem. 5)	<input type="text"/>
Name of the Subject :	<input type="text"/>
BMC - 5 : Paper - AR - 503	<input type="text"/>
Subject Code No. : <input type="text"/> 6 <input type="text"/> 7 <input type="text"/> 1 <input type="text"/> 3	<input type="text"/>
Section No. (1, 2,.....) : <input type="text"/> Nil	
Student's Signature	

- (2) Figures on right indicate full marks.
- (3) Discussion based answers to be written point wise.
- (4) Support your answers with neat sketches.

- 1 (a) State true or false. 10
- (i) Chemicals are used to aerate the concrete for light weight concrete structures.
 - (ii) TERI is an organization which helps architects to understand energy efficiency of materials.
 - (iii) A geodesic line is the shortest distance between two points on a curved surface.
 - (iv) When between two upright angles a family of paraboloid is suspended it is hyperbolic paraboloid.
 - (v) Petronas towers is an example of rigid framed structure.
 - (vi) Tadao Ando's Modern Art Museum has flat slab supported on Y columns.
 - (vii) Three column edge profiles for trusses are vertical edge, cornice edge, mansard edge.
 - (viii) The pre-stressed concrete beam experiences continuous state of tension.
 - (ix) Metal domes need to be anchored and not taken deep in the soil.
 - (x) Light weight concrete is used in in-situ construction.

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[Contd...

- (b) Answer with appropriate sketch : **10**
- (i) Load distribution in Arch. system.
 - (ii) Folded plates on circular plan.
 - (iii) Lunes and sectors of a dome.
 - (iv) Kibitka and its elements.
 - (v) Tepee concept.
- 2 (a) Explain the advantages of pre-stressing over RC technology. What are the materials generally needed for the same ? **10**
- (b) Based on your case studies suggest a suitable design and layout for exhibition pavillion measuring 25×25 meters using space frames (with suitable exhibition modules) for the purpose of exhibition of Books. Sketch the plan, section and any one joinery detail maintaining proper proportions. **15**
- OR**
- 2 (b) Using thin shells with double curves, suggest a roofing system for a community club (for yoga/meditation etc) measuring about 15 m radius (assume suitable data) show plan, section, with choice of materials and any one joinery detail. **15**
- 3 (a) What are the advantages of modular construction technology ? **10**
- (b) Which are the different types of bracings possible for tall structures ? Discuss with an example. **10**
- 4 (a) Mention different types of double layer grid configurations for space frame with sketches, also explain the joinery for the same. **10**
- (b) What are shell structures ? Discuss with construction technique for the same. **10**
- 5 Attempt any three : **15**
- (i) Metal dome configurations.
 - (ii) Tree support in space grid structures.
 - (iii) Light weight concrete for pre-cast components.
 - (iv) Principal components of tensile structures.