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GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013

Subject code: 711906N Date: 06-01-2014 Subject Name: Airport Planning & Design Time: 10.30 am - 01.00 pm**Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Explain the following terms(with sketches) with respect to 0.1 07 Air Transportation/Aviation field: (i) Airport Capacity (ii) Alternate Airport (iii) Blast-pads **(b)** State the salient features of Dreamliner 787. 07 **Q.2** (a) Explain the following terms (with sketches) with respect to **07** Transportation/Aviation field: (i) Conical Surface (ii) Gate (iii) Holding Apron (b) State the salient features of "flying car" FAA approved and street legal. 07 **(b)** State the salient features of Kansai international airport (JAPAN). **07 07 Q.3** (a) Explain various categories of runway considering runway length and width as per ICAO. (b) Explain basic runway length. Explain, with sketches (Plan and L-section) the **07** criteria for determining basic runway length for large size turbined power aircraft. OR 0.3 (a) Explain the effect of environs at the airport on the runway length. Give **07** equations for correcting the basic runway length. (b) Explain (with plan view) various components of runway system; specify the **07** widths of the runway as recommended by ICAO for different airports. **Q.4** (a) Explain with sketches the significance of Wind (Head, Tail and Cross) for 07 runway orientation. Define usability factor for runway system. (b) Explain taxiway system at the airport. Explain exit taxiway with dimensioned **07** sketch. Sketch typical airport configuration with separate taxiway routes to or from terminal area. **Q.4** (a) Write note on "Handbook Method of Runway Capacity". 07 **(b)** Why pavement markings are required on runway and taxiway? **07** 0.5 What are the functions of Tri-Cycle under-carriage? Sketch Dual-in-tandem **07** wheel configuration. Explain the weight distribution on main gears and nose gear. (b) Explain with sketch the relationship of Payload and Range of Aircraft. **07 Q.5** (a) Define Airport Masterplan. Enlist the elements of Airport Masterplan. 07 (b) Explain the difference between highway and airport pavements with reference **07** to tyre pressure, weight of vehicle and load repetitions.
