UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: MBA (AVM)   Semester: III
Subject: AERODROME DESIGNS AND OPERATIONS   Subject code- TRAV8002
Max. Marks: 100   Time: 03 hrs.
Instructions:

SECTION A

S. No.	**Attempt all of the following, each question carry one marks.**		
Q 1	The number of States participated in Chicago convention.	**1**	**CO 1**
Q 2	Who appoints the Secretary General of ICAO?	**1**	**CO 1**
Q 3	To what accuracy Aerodrome Reference Point is to be measured and reported?	**1**	**CO 1**
Q 4	Longitudinal slope along the centerline of a code no 3 or 4 runways shall not exceed ----- %. (a) .5 (b) 1 (c) 1.25 (d) 2	**1**	**CO 1**
Q 5	Intersection angle of the runway turn pad shall not exceed ____ degrees. (a) 25 (b) 35 (c) 40 (d) 30	**1**	**CO 1**
Q 6	A runway end safety area shall extend from the end of runway strip to a distance of at least ___. a) 30 m (b) 60 m (c) 90 m (d) 50 m	**1**	**CO 1**
Q 7	For which category of runway operation radio altimeter operating area should be established?	**1**	**CO 1**
Q 8	The intersecting angle of a rapid exit taxiway with runway should be preferably _____ degrees. a) 25 (b) 30 (c) 45 (d) 35	**1**	**CO 1**
Q 9	An isolated aircraft parking position shall be located at a distance not less than _____ from other parking positions, buildings or public area. a) 50 m (b) 100 m (c) 125 m (d) 150 m	**1**	**CO 1**
Q 10	A straight portion of a taxiway should have a width of not less than _____ for aircraft with OMGWS of 9 m upto but not including 15 m. (a) 18 m (b) 23 m (c) 33 m (d) 28 m	**1**	**CO 1**
Q 11	Longitudinal spacing between centre line lights for precision approach runway CAT II/III shall not exceed _____ a) 5 m b) 7.5 m c) 15 m d) 45 m	**1**	**CO 1**
Q 12	Stop bar consists of lights spaced at intervals of 3 m across the taxiway, showing green in the intended direction of aero plane approach to the intersection of taxiway on runway holding position. a) False b) True	**1**	**CO 1**
Q 13	The signal area shall be an even horizontal surface at least _____m square and it should be surrounded by a white border not less than 0.3 m wide.	**1**	**CO 1**

Q 14	Runway marking shall always be of ……………… color and the taxiway marking shall be of ………………… color. (a) yellow, conspicuous (b) white, red (c) white, yellow (d) yellow, white	1	CO 1
Q 15	Apron safety lines shall be of a ………………color which shall contrast with that used for aircraft stand markings (a) conspicuous (b) red (c) white (d) yellow	1	CO 1
Q 16	The length of threshold marking stripes shall be at least ……… (a) 21.5 m (b) 30 m (c) 22 m (d) 22.5 m	1	CO 1
Q 17	The pairs of touchdown zone markings coincident with or located within ……… m of an aiming point marking shall be deleted from the pattern. (a) 100 (b) 20 (c) 200 (d) 50	1	CO 1
Q 18	Runway turn pad marking shall be of …………… color. (a) white (b) conspicuous (c) yellow (d) red	1	CO 1
Q 19	Aircraft stand markings on a apron should be located so as to provide the minimum ………m clearance between code letter C aircraft using the stand and any adjacent building, aircraft on another stand and other objects, when the nose wheel follows the stand marking. (a) 3 (b) 4.5 (c) 7.5 (d) 2	1	CO 1
Q 20	A road-holding position marking shall be provided at all road entrances to ……………… (a) Apron (b) Runway (c) Taxiway (d) Hangar	1	CO 1

SECTION B
Attempt all of the following, each question carry 2 marks.

Q 1	Who are the members of ICAO Assembly and what is frequency of Assembly meetings?	2	CO2
Q 2	Describe the circumstances under which runway threshold may be displaced.	2	CO2
Q 3	Why should the radio altimeter operating area be without undulations?	2	CO2
Q 4	What will happen if the runway surface is irregular?	2	CO3
Q 5	What are the height from inner horizontal surface and slope of conical surface for precision approach CAT II/III runway with code number as 3 or 4?	2	CO2
Q 6	What are the length and slope of second/middle section of approach surface for precision approach runway CAT II/III and runway code number 3 and 4?	2	CO2
Q 7	A signalling lamp shall be capable of producing _____ , _____ and _____ colour signals, and of transmitting a message in any one of the three colors by Morse Code up to a speed of at least _____ words per minute.	2	CO2
Q 8	Where one or more sets of stand markings are superimposed on a stand marking, the lines should be continuous for the most ………... aircraft and ………….. for other aircraft.	2	CO2

Q 9	Stopway lights shall be …………… unidirectional lights showing ………. in the direction of the runway.	2	CO2
Q 10	An information sign other than a location sign shall consist of an inscription in ………on a …………..background.	2	CO2

SECTION-C
Attempt all of the following, each question carry 10 marks.

Q 1	Define **any two** of the following terms: Aerodrome Apron Runway Clear way	10	CO2

Q 2	Calculate declared distances for both runway orientations with following characteristics:
	 Serviceable length of runway 08/26—3965 m
	RWY 08---
	    a) Threshold displaced by 410 m because of obstruction in approach surface.
	    b) Length of stopway—225 m
	    c) Length of clearway—330 m
	RWY 26—
	    a) Threshold displaced by 222 m because of obstruction in approach surface.
	    b) Length of stopway—432 m
	    c) Length of clearway--NIL
		10	CO3

Q 3	How will you calculate the minimum distance required for marking a runway holding position for a precision approach runway for code letter E aircraft?	10	CO4

SECTION-D
Attempt all of the following, each question carry 10 marks.

Q 1	A passenger terminal of 35 m height needs to be constructed and is going to fall only in transitional surface of associated precision approach Cat II runway which is 60 m wide. What should be its minimum distance from the centre line of runway?	10	CO4
Q 2	Draw a sketch of simple approach lightning system using point source lights and label it with distances.	10	CO4
Q 3	Draw a runway sketch and show any four of the following markings with respect to code no.4 runway and label them with lengths and distances: a) Runway designation marking b) Threshold marking c) Runway center line marking d) Touchdown zone marking e) Aiming point marking.	10	CO4