UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020

Programme: B. TECH (Mining Engineering)   **Semester: VIII**
Course: Mine Hoisting   **Time: 03 hrs.**
Course Code: MIEG 432   **Max. Marks: 100**
Instructions: All questions are compulsory

SECTION A

S. No.	Multiple Choice Questions	Marks	CO
Q 1	If the applied force F on the rope is twice the weight W, determine mechanical advantage (a) 2 (b) 1 (c) 3 (d) 1.5	2	CO1
Q 2	Brake post force F will become smaller if brake shoe friction coefficient becomes (a) Larger (b) Smaller (c) First smaller than larger (d) First larger than smaller	2	CO1
Q 3	Decrease in breaking force built up period lies between (a) 0.3s-0.5s (b) 0.4s-0.6s (c) 0.8s-0.9s (d) 0.5s-0.7s	2	CO1
Q 4	The gradient that can be negotiated successfully using cable belt system (a) 25° (b) 40° (c) 45° (d) 55°	2	CO1
Q 5	The Rope speed in direct rope haulage is (a) 08-12 km/h (b) 06-09 km/h (c) 05-10 km/h (d) 07-08 km/h	2	CO2
Q 6	The Fixed tension arrangement is very useful on short haulage planes up to about (a) 900 m (b) 700 m (c) 750 m	2	CO2

	(d) 1000 m		

Q 7	The least gradient for a gravity haulage depend on
	    (a) The length of the plane
	    (b) The size of tubs
	    (c) The capacity of tubs
	    (d) All
		2	CO2

Q 8	The safety device used to deflect a backward runaway into the prepared side of the roadway is
	    (a) Back catches
	    (b) Stop blocks
	    (c) Buffers
	    (d) Pointer plates
		2	CO2

Q 9	In which type of rope the wires are commonly of different diameters and arranged in different ways
	    (a) Simple Stranded Rope
	    (b) Compound Stranded Rope
	    (c) Triangular Stranded Rope
	    (d) All
		2	CO3

Q 10	The ultimate tensile strength of the guide rope is
	    (a) 5.5-13.5 ton/sq.cm
	    (b) 15.5-33.5 ton/sq.cm
	    (c) 7.5-53.5 ton/sq.cm
	    (d) 12.5-34.5 ton/sq.cm
		2	CO3

Q 11	The plunger or ram within a cylinder of reciprocating pump is called as
	    (a) Casing
	    (b) Working Barren
	    (c) Transfusser
	    (d) Compressor
		2	CO3

Q 12	A unit of two ram pumps placed side by side and actuated by the same engine, with a common delivery is called as
	    (a) Duplex Pump
	    (b) Triplex Pump
	    (c) Quadruplex Pump
	    (d) Quintuplex Pump
		2	CO3

Q 13	The diameter of the rope used for turning and jibbing in drum carrying 36.4 m length is
	    (a) 1.27 cm
	    (b) 2.27 cm
	    (c) 3.27 cm
	    (d) 4.27 cm
		2	CO4

Q 14	The angle of the picks and their arrangement in the chain of the coal cutting machine depends upon
	    (a) Material to be cut
	    (b) Position of cut
	    (c) Both
	    (d) None
		2	CO4

Q 15	Which of the following is the essential part of coal cutting machine (a) Cutting unit (b) Driving Unit (c) Hauling Unit (d) All	**2**	**CO4**
SECTION B			
Q 6	Discuss the following tensioning arrangement in details? (a) Fixed tension (b) Mobile tension (c) Gradient operated mobile tension	**3+3+4**	**CO1**
Q 7	Write in details about the following rope haulage and their advantages as well as disadvantages: (a) Single drum direct rope haulage (b) Double drum direct rope haulage	**5+5**	**CO2**
Q 8	Describe three-throw ram pumps and write their advantages, disadvantages and application.	**4+3+3**	**CO3**
Q 9	Write in details about the centrifugal pump used in mines and its advantages and disadvantages. OR Write in details about the mono pump used in mines and its application, advantages and disadvantages	**4+3+3** **4+3+3**	**CO3**
Q 10	Write in details about the following coal cutting machine: (a) Short Wall Coal Cutting Machine (b) Long Wall Coal Cutting Machine	**5+5**	**CO4**
SECTION-C			
Q 10	Write detailed notes on the following safety devices used in mines: (a) Stop blocks (b) Back catch (c) Approach warning devices (d) Back stays or drags (e) Pointer plate OR Write detailed notes on the following coal cutter used in the mines: (a) Arc wall coal cutter (b) Percussive coal cutters	**4+4+4+4+4** **10+10**	**CO4**