



EMCI™ SAMPLE EXAMINATION QUESTIONS with Answers and References

No.	Item No.*	Domain	Difficulty *	Answer	Question	Reference
1.	1.3	1	M-D E-M	B	When performing business forecasting using Net Present Value (NPV) models, it is important to: A. develop a multiple table spreadsheet. B. identify and analyze the assumptions built into the model. C. predict accurately economic and environmental trends. D. freeze the model for data validation.	Intermediate Financial Management by Eugene F. Brigham, Phillip R. Daves South-Western College Pub; 9 edition (March 29, 2006) # ISBN-13: 978-0324319866 Chapter 12, 13
2.	1.4	1	E-M	C	After conducting a root-cause definition process as part of a risk analysis, the team may conduct a: A. SWOT analysis. B. brainstorming session. C. Delphi technique. D. risk mitigation planning session.	Risk Management Concepts and Guidance, 3rd edition. by Carl L. Pritchard, ESI international, Arlington, VA, 2001. ISBN 978-1-890367-39-8 Chapter 10
3.	1.4	1	M-D D-M	C	Company ABC is negotiating to form a joint venture with Company XYZ for collaboration to introduce a new product to market. This is an example of risk: A. mitigation. B. exploitation. C. sharing. D. transfer.	Intermediate Financial Management by Eugene F. Brigham, Phillip R. Daves South-Western College Pub; 9 edition (March 29, 2006) # ISBN-13: 978-0324319866 Chapter 25
4.	1.4	1	M-D	D	Company ABC is implementing an Enterprise Resource Planning (ERP) system. A thorough risk analysis indicates that the main risk to the project's success is the degree to which the employees' adopt the new methodologies and work processes. The best technique to address this risk is: A. transfer to 3rd party consulting firm B. sharing with an HR consulting firm C. avoidance by keeping old work processes D. mitigation through a change management plan	Risk Management Concepts and Guidance, 3rd edition. by Carl L. Pritchard, ESI international, Arlington, VA, 2001. ISBN 978-1-890367-39-8 Chapter 6



No.	Item No.*	Domain	Difficulty *	Answer	Question	Reference
5.	1.5	1	M-D	A	<p>The main benefit of using the Delphi Technique is to:</p> <p>A. reduce biases in trend forecasting. B. encourage participation in forecasting. C. improve financial results. D. accurately review historical technology trends.</p>	Risk Management Concepts and Guidance, 3rd edition. by Carl L. Pritchard, ESI international, Arlington, VA, 2001. ISBN 978-1-890367-39-8 Chapter 10
6.	2.1	2	M-D	A	<p>One primary reason innovative ideas prove to be unprofitable involves:</p> <p>A. high research and development costs. B. advertising requirements. C. patent research costs. D. liability insurance costs.</p>	STRATEGIC MANAGEMENT, Ninth Edition Authors: John Pearce, Villanova University Richard Robinson, University of South Carolina—Columbia McGraw-Hill ISBN: 0-07-298007-9 2005, Chapter 8
7.	2.2	2	M-D	C	<p>Historically, when a dominant product design emerges, it:</p> <p>A. has the highest cost of production. B. is the most technologically advanced product on the market. C. rarely embodies the most advanced technological features. D. has the lowest marketing costs.</p>	Strategic Management of Technological Innovation Schilling, Melissa ISBN: 0072942983 McGraw-Hill 2005, Chapter 4
8.	2.3	2	M	A	<p>Your firm must re-deploy some key resources to a new project and you must outsource some activities. The best ones to consider outsourcing are:</p> <p>A. components that are not critical or strategic. B. components that are causing quality issues. C. activities that are difficult for your organization to do. D. projects that are highly unspecified and require creativity.</p>	The Project Manager's Desk Reference by James P. Lewis McGraw-Hill; 2 edition (November 17, 1999) ISBN-13: 978-0071347501, Chapter 4, 5
9.	2.4	2	M	A	<p>In evaluating the potential profits from alternative outcomes, the Expected Value Rule requires projected profits and the:</p> <p>A. probabilities of each outcome. B. most desired outcome. C. least undesired outcomes. D. most likely outcome.</p>	Contemporary Engineering Economics 3rd ed. (Chan S. Park) ISBN 0-13-089310-2, Chapter 14



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10.	2.4	2	M-D	C	<p>The least important factor in using Net Present Value to evaluate a project is:</p> <p>A. taxes. B. the timing of cash flows. C. a sunk cost. D. the discount rate.</p>	Contemporary Engineering Economics 3rd ed. (Chan S. Park) ISBN 0-13-089310-2, Chapter 1
11.	3.1	3	M	C	<p>A customer of a new automotive component is complaining that it is "too noisy". The development engineer should begin a(n) _____ analysis.</p> <p>A. accelerated vibration durability B. structural C. vibro-acoustics and sound pressure D. modal</p>	Sound and Structural Vibration, Second Edition: Radiation, Transmission and Response by Frank J. Fahy and Paolo Gardonio Academic Press; 2 edition (January 12, 2007) # ISBN-13: 978-0123736338, Chapter 3
12.	3.1	3	M	C	<p>In developing and commercializing new technologies one of the most important human-based techniques to ensure error-free designs is the:</p> <p>A. field test. B. CAD/CAM. C. design review. D. DFA/DFM.</p>	Engineering Management: Creating and Managing World Class Operations Prentice Hall; 1st edition (April 24, 1997) # ISBN-13: 978-0023241215, Chapter 12
13.	3.2	3	M-D	D	<p>A PFMEA (Process Failure Mode and Effects Analysis) considers:</p> <p>A. how the design specifications translate into process specifications. B. how quality is to be controlled in the process. C. how to improve the assemble ability of the product design. D. what could go wrong in the process and what should be done about it.</p>	Automotive Quality Systems Handbook, Second Edition: ISO/TS 16949:2002 Edition Butterworth-Heinemann; 2 edition (July 29, 2005) # ISBN-13: 978-0750666633, Chapter 14
14.	3.4	3	M-D	B	<p>The most widely known process for converting customer wants and needs into product and process specifications is:</p> <p>A. TQM- Total Quality Management. B. QFD- Quality Function Deployment. C. DFMA- Design Failure Mode Analysis. D. DFA - Design for Assembly.</p>	Engineering Management: Creating and Managing World Class Operations Prentice Hall; 1st edition (April 24, 1997) # ISBN-13: 978-0023241215, Chapter 12



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15.	3.4	3	M	A	<p>Simulation modeling is an appropriate tool to:</p> <p>A. answer “what if” questions about an existing system, explore the implications of operational changes, or study system sensitivity to variable conditions.</p> <p>B. arrive at an exact projection of current operational output, quantify imprecise factors, or discover possible flaws in the manufacturing process.</p> <p>C. use when expecting lengthy product runs with no design changes, dealing with a static process, or operating under invariant conditions.</p> <p>D. use when creating a pilot process, working with a proven solution, or analyzing a system without making any assumptions.</p>	<p>Operations Management for Competitive Advantage by Richard B Chase, F. Robert Jacobs and Nicholas J Aquilano McGraw-Hill/Irwin; 11 edition (May 5, 2005) # ISBN-13: 978-0073121666, Chapter 5</p>
16.	4.1	4	M	C	<p>A commonly used method of calculating depreciation is:</p> <p>A. expected value analysis.</p> <p>B. linear programming.</p> <p>C. sum-of-the-year’s digits.</p> <p>D. discrete simulation.</p>	<p>Operations Management for Competitive Advantage by Richard B Chase, F. Robert Jacobs and Nicholas J Aquilano McGraw-Hill/Irwin; 11 edition (May 5, 2005) # ISBN-13: 978-0073121666, Chapter 14</p>
17.	4.2	4	M	C	<p>For a project already underway, the best way to estimate the total cost at completion is:</p> <p>A. budgeted cost of entire project + budgeted cost of work remaining.</p> <p>B. original budget of work performed + updated cost of work remaining.</p> <p>C. actual cost of work performed + updated cost of work remaining.</p> <p>D. actual cost of work performed + cost variance to date.</p>	<p>Project Management: Processes, Methodologies, and Economics (2nd Edition) (Prentice-Hall International Series in Industrial and Systems Engineering) Prentice Hall; 2 edition (October 20, 2004) # ISBN-13: 978-0130413314 p. 469</p>
18.	4.2	4	M	D	<p>A matrix organization is useful when:</p> <p>A. project managers solely make resource assignments.</p> <p>B. functional managers directly control subordinates.</p> <p>C. project policies are standardized.</p> <p>D. multiple projects are managed and key resources are shared.</p>	<p>Cleland, D.I. (ed.) "Matrix Management Systems", Van Nostrand Reinhold, N.Y., 1984, Pg. 24</p>
19.	4.3	4	M-E	C	<p>Suppose that one-quarter of the way through a project, the actual cost of work performed is greater than the budgeted cost of work performed. The project currently:</p> <p>A. is under budget, and will be completed under budget.</p> <p>B. has a cost overrun, and will always be completed over budget.</p> <p>C. has a cost overrun, but still could be completed at or under budget.</p> <p>D. is under budget, but still could be completed at or over budget.</p>	<p>Project Management: Processes, Methodologies, and Economics (2nd Edition) (Prentice-Hall International Series in Industrial and Systems Engineering) Prentice Hall; 2 edition (October 20, 2004) # ISBN-13: 978-0130413314, p. 215</p>



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20.	4.4	4	M	B	<p>When using project management software, one reason to combine all projects into one master file is to:</p> <p>A. analyze the consequences of doing the projects in a logical sequence. B. put all common resources into a pool for all the projects to draw upon. C. rank projects so the ones with the least strategic value may be dropped. D. create one work breakdown structure for the firm.</p>	<p>The Complete Idiot's Guide to Project Management with Microsoft Project 2003, Publisher: Alpha (January 2005) # ISBN-13: 978-1592573080 page 217</p>
21.	5.3	5	M	B	<p>The Income Statement includes a non-cash expense for expenditures on plant and equipment. It is called:</p> <p>A. inventory depletion. B. depreciation. C. capital expenditure. D. accrued future expense.</p>	<p>Contemporary Engineering Economics 3rd ed. (Chan S. Park) ISBN 0-13-089310-2, Chapter 2</p>
22.	5.3	5	E-M	D	<p>In most cases, taxes are paid on</p> <p>A. revenues. B. expenses. C. capital costs. D. pre-tax income.</p>	<p>Contemporary Engineering Economics 3rd ed. (Chan S. Park) ISBN 0-13-089310-2, Chapter 2</p>
23.	5.4	5	M	D	<p>When evaluating alternatives, sunk costs are:</p> <p>A. reviewed. B. included. C. estimated. D. ignored.</p>	<p>Intermediate Financial Management by Eugene F. Brigham, Phillip R. Daves South-Western College Pub; 9 edition (March 29, 2006) # ISBN-13: 978-0324319866, Chapter 13</p>
24.	5.4	5	M	B	<p>For mutually exclusive alternatives the firm should select the alternative with the:</p> <p>A. highest net present value. B. highest rate of return. C. lowest capital cost. D. shortest life.</p>	<p>Intermediate Financial Management by Eugene F. Brigham, Phillip R. Daves South-Western College Pub; 9 edition (March 29, 2006) # ISBN-13: 978-0324319866, Chapter 12</p>



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25.	5.5	5	M	D	<p>All other factors held constant, a decrease in inventory holdings would be caused by:</p> <p>A. the purchase price of an item decreased by 50%. B. fixed order costs increase by 100%. C. the carrying price of an item decreased as a percent of purchase price. D. a sales increase of 25%.</p>	Intermediate Financial Management by Eugene F. Brigham, Phillip R. Daves South-Western College Pub; 9 edition (March 29, 2006) # ISBN-13: 978-0324319866, Chapter 21
26.	6.1	6	E-M	B	<p>A coordinated series of sales and advertising efforts utilizing a number of different media is known as a:</p> <p>A. blitz. B. campaign. C. flight. D. bombardment.</p>	Marketing Engineering, Revised Second Edition Trafford Publishing; 2nd edition (July 6, 2006) # ISBN-13: 978-1412022521 Chapter 8
27.	6.3	6	M-E	B	<p>A brand identity:</p> <p>A. includes name of the organization, the location of the corporate headquarters, and the product name. B. includes brand names, logos, brand associates and brand personality. C. separates your product from others in the mind of your constituents by using multi-channel advertising. D. is the essence of how an organization sees itself.</p>	Marketing Engineering, Revised Second Edition Trafford Publishing; 2nd edition (July 6, 2006) # ISBN-13: 978-1412022521 Chapter 3
28.	6.3	6	M	B	<p>The good will that is inherent in an established brand name, i.e., the positive feelings customers and prospects have about the brand name, is known as:</p> <p>A. Positive Attraction. B. Brand Equity. C. Favorability. D. Preference.</p>	Marketing Engineering, Revised Second Edition Trafford Publishing; 2nd edition (July 6, 2006) # ISBN-13: 978-1412022521 Chapter 3
29.	6.3	6	M	D	<p>A brand is best defined as the:</p> <p>A. slogan that customers associate with a product. B. product that customers think of when they hear a commercial name. C. color and typeface that customers associate with a product or service. D. tangible and intangible attributes customers associate with a product or service.</p>	Marketing Engineering, Revised Second Edition Trafford Publishing; 2nd edition (July 6, 2006) # ISBN-13: 978-1412022521 Chapter 5



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30.	6.3	6	M-E	C	Deriving additional impact from coordinating the delivery of brand attribute messages across media and promotional channels, including trade shows, collateral, and promotional items, is known as: A. energy. B. empathy. C. synergy. D. sympathy.	Marketing Engineering, Revised Second Edition Trafford Publishing; 2nd edition (July 6, 2006) # ISBN-13: 978-1412022521 Chapter 8
31.	7.1	7	M-E	D	Coaching is one of the best ways to have the employee: A. sustain organizational progress. B. ensure a subordinate pays attention. C. support the coach's authority. D. understand the corporate culture.	O'Connor et al, "Training for Organizations", South-Western, Cincinnati, O., 2002, Pg.197
32.	7.1	7	E-M	D	One of the most important aspects of effective performance management of direct reports is: A. raising work levels on a regular basis. B. reviewing working conditions. C. matching team members to tasks. D. providing regular feedback.	Silverman, M. , "The Art of Managing Technical Projects", Prentice Hall, Englewood Cliffs, N.J., 1987, Pg.94
33.	7.2	7	M	B	A major technique used in negotiating a win-win outcome is: A. developing everyone's negotiating strategies. B. maintaining a separation of issues and individuals. C. using assertiveness to demonstrate strength. D. confronting individual sensitivities.	Fisher, Roger; Ury, William; Patton, Bruce- "Getting to Yes", Houghton Mifflin, Boston, 1991, 2nd Ed., Chapter 2
34.	7.4	7	M	D	When choosing members for an engineering project team, the most important aspect is the: A. work relationship of the person to the project manager. B. desire to expose a person from a different department to a new area. C. work location of the proposed person. D. technical competence in the area of concern.	The Project Manager's Desk Reference by James P. Lewis McGraw-Hill; 2 edition (November 17, 1999) ISBN-13: 978-0071347501, Chapter 5



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35.	7.7	7	M-E	D	<p>In communicating company policies to new employees, it is most important to:</p> <p>A. describe possible future changes. B. compare them to policies in other companies. C. provide a copy of all policies for their files. D. explain their rationale from a management perspective.</p>	<p>Engineering Management: Creating and Managing World Class Operations Prentice Hall; 1st edition (April 24, 1997) # ISBN-13: 978-0023241215, Chapter 7</p>
36.	8.1	8	M-D	D	<p>You are employed by a local manufacturer that operates internationally but has offices and plants in your area. You are asked to speak publicly at a school board meeting about the manufacturer and their products. Your employment handbook states that you should not disclose their product set to anyone publicly. You must:</p> <p>A. decline the offer. B. accept the offer but not disclose what products are manufactured in your local plant. C. accept the offer and let your employer know what you have been asked to do. D. discuss the offer with your employer before accepting or rejecting the speech.</p>	<p>Engineering Ethics: An Industrial perspective Publisher: Academic Press (April 11, 2006) # ISBN-13: 978-0120885312, Chapter 1</p>
37.	8.3	8	M-D	B	<p>Copyright law defines publication as the distribution of copies to the public by sale or other transfer of ownership or for rent, lease, or lending. Public distribution is represented by a:</p> <p>A. technical presentation to internal management. B. thesis on the shelf in a library. C. sale of a copyright. D. novel written on a paper bag and left in a restaurant.</p>	<p>Contracts and the Legal Environment for Engineers and Architects, McGraw-Hill Science/Engineering/Math; 6 edition (July 30, 1999) # ISBN-13: 978-0070393639, Chapter 24</p>
38.	8.3	8	M-D	B	<p>Intellectual property law addresses rights:</p> <p>A. of the individual. B. to exclude others. C. to manufacture or sell items. D. to purchase items.</p>	<p>Contracts and the Legal Environment for Engineers and Architects, McGraw-Hill Science/Engineering/Math; 6 edition (July 30, 1999) # ISBN-13: 978-0070393639, Chapter 24</p>



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39.	8.3	8	M-E	B	<p>In the United States, a granted patent is enforceable:</p> <p>A. for 17 years. B. for 20 years from filing date. C. for 30 years. D. until the inventor dies.</p>	<p>Contracts and the Legal Environment for Engineers and Architects, McGraw-Hill Science/Engineering/Math; 6 edition (July 30, 1999) # ISBN-13: 978-0070393639, Chapter 24</p>
40.	8.4	8	M-D	B	<p>The following agency is involved with safety standard compliance for the wire and cable industry:</p> <p>A. ISO - International Organization for Standardization. B. IEC - International Electrotechnical Commission. C. ASTM - American Society of Testing and Materials. D. ASME - American Society of Mechanical Engineers.</p>	<p>Electric Cables Handbook Publisher: Blackwell Publishing Limited; 3 edition (November 1, 1997) # ISBN-13: 978-0632040759, Chapter 7</p>

* Item No. – Corresponding to bullet numbers in Table of Contents in the EMC-BOK

* Difficulty -

- E - Easy
- E-M - Easy to Medium
- M-E - Medium to Easy
- M - Medium
- M-D - Medium to Difficult
- D-M - Difficult to Medium
- D - Difficult