

Answer 1 (Creating index)

PUT examination

```
{
  "mappings": {
    "_doc": {
      "dynamic": false,
      "properties": {
        "subject": {
          "type": "text"
        },
        "symbol_number": {
          "type": "keyword"
        },
        "registration_number": {
          "type": "long"
        },
        "copy_no": {
          "type": "double"
        },
        "attempted": {
          "type": "boolean"
        },
        "exam_center": {
          "type": "geo_point"
        },
        "examination_date": {
          "type": "date",
          "format": "yyyy-MM-dd"
```

```
},
"questions_attempted": {
  "type": "integer_range"
},
"required_items": {
  "type": "text"
},
"examination_subject": {
  "properties": {
    "name": {
      "type": "text"
    },
    "code": {
      "type": "integer"
    }
  }
},
"examination_center": {
  "type": "nested",
  "properties": {
    "name": {
      "type": "text"
    },
    "address": {
      "type": "text"
    }
  }
}
```

```
    }  
  }  
}  
}
```

Answer 2 (Two valid documents)

PUT examination/_doc/1

```
{  
  "subject": "Simulation and Modelling",  
  "symbol_number": "7464",  
  "registration_number": "5112115156600",  
  "copy_no": 3115,  
  "attempted": true,  
  "exam_center": {  
    "lat": 81.69,  
    "lon": 30.55  
  },  
  "examination_date": "2018-09-04",  
  "questions_attempted": {  
    "long": 1,  
    "short": 6  
  },  
  "required_items": ["Pen", "Scale"],  
  "examination_subject": {  
    "name": "Simulation and Modelling",  
    "code": 301  
  },  
  "examination_center": [{
```

```
    "name": "Patan Multiple Campus"
  },
  {
    "address": "Patan"

  }
]
}
```

PUT examination/_doc/2

```
{
  "subject": "Compiler",
  "symbol_number": "7464",
  "registration_number": "5112115156600",
  "copy_no": 3128,
  "attempted": false,
  "exam_center": {
    "lat": 81.69,
    "lon": 30.55
  },
  "examination_date": "2018-09-09",
  "questions_attempted": {
    "long": 2,
    "short": 7
  },
  "required_items": ["Pen", "Pencil"],
```

```
"examination_subject": {
  "name": "Compiler",
  "code": 304
},
"examination_center": [{
  "name": "Patan Multiple Campus"
},
{
  "address": "Patan"
}
]
```

Answer 3 (Invalid document)

PUT examination/_doc/1

```
{
  "subject": "Simulation and Modelling",
  "symbol_number": "7464",
  "registration_number": "5112115156600",
  "copy_no": aa1,
  "attempted": true,
  "exam_center": {
    "lat": 81.69,
    "lon": 30.55
  },
  "examination_date": "09-04-2018",
  "questions_attempted": {
```

```
    "long": 1,
    "short": 6
  },
  "required_items": ["Pen", "Scale"],
  "examination_subject": {
    "name": "Simulation and Modelling",
    "code": 301
  },
  "examination_center": [{
    "name": "Patan Multiple Campus"
  },
  {
    "address": "Patan"
  }
]
```

Exception Thrown

```
{
  "error": {
    "root_cause": [
      {
        "type": "mapper_parsing_exception",
        "reason": "failed to parse"
      }
    ],
    "type": "mapper_parsing_exception",
  }
}
```

```
"reason": "failed to parse",
"caused_by": {
  "type": "json_parse_exception",
  "reason": "Unrecognized token 'a1': was expecting ('true', 'false' or 'null')\n at [Source:
org.elasticsearch.common.bytes.BytesReference$MarkSupportingStreamInputWrapper@55b784
1e; line: 5, column: 20]"
}
},
"status": 400
}
```

Answer 4

```
curl -H "Content-Type: application/json"
-XPOST "http://localhost:9200/accounts/_doc/_bulk?pretty"
--data-binary @accounts.json
```

Answer 5

```
http://localhost:9200/accounts/_doc/_search
```

```
/*
- age greater than equal to 30 and less than equal to 70
*/
```

```
http://localhost:9200/accounts/_doc/_search?q=age: [30 TO 70]
```

```
/*
- females with age less than equals 25
*/
```

```
http://localhost:9200/accounts/_doc/_search?q=gender:F AND age: [* TO 25]
```

```
/*
- males belonging to ME state
```

*/

http://localhost:9200/accounts/_doc/_search?q=gender:M AND state:ME

Answer 6

a.

```
POST accounts/_update_by_query?conflicts=proceed
{
  "query": {
    "match_all": {}
  },
  "script": {
    "lang": "painless",
    "source": "ctx._source.expense_list = []"
  }
}
```

b.

```
POST accounts/_update_by_query?conflicts=proceed
{
  "query": {
    "range": {
      "age": {
        "gte": 10,
        "lte": 25
      }
    }
  },
  "script": {
    "lang": "painless",
    "source": "ctx._source.expense_list.add('student_loan')"
  }
}
```

c.

```
POST accounts/_update_by_query?conflicts=proceed
{
  "query": {
    "range": {
```



```

        "age": {
            "gt": 25,
            "lte": 50
        }
    },
    "script": {
        "lang": "painless",
        "source": """
            for (int i = 0; i < 2; i++) {
                String item = params.list[i];
                if (!ctx._source.expense_list.contains(item)) {
                    ctx._source.expense_list.add(item)
                }
            }
        """,
        "params": {
            "list": ["car_loan", "house_loan"]
        }
    }
}

```

d.

```

POST accounts/_update_by_query?conflicts=proceed
{
  "query": {
    "range": {
      "balance": {
        "gte": 40000
      }
    }
  },
  "script": {
    "lang": "painless",
    "source": "ctx._source.expense_list.add('student_loan')"
  }
}

```

e.

```

POST accounts/_update_by_query?conflicts=proceed
{
  "query": {

```

```

    "match": {
      "state": "PA"
    }
  },
  "script": {
    "lang": "painless",
    "source": "ctx._source.balance -= 2000"
  }
}

```

Answer 7

POST accounts/_delete_by_query

```

{
  "query": {
    "match": {
      "state": "KY"
    }
  }
}

```

Answer 9

A.

PUT college

```

{
  "mappings": {
    "_doc": {
      "dynamic": false,
      "properties": {
        "batch": {
          "type": "integer"
        },
        "student": {
          "type": "nested",
          "properties": {

```

B.

C.

```
PUT workshop
{
  "mappings": {
    "_doc": {
      "dynamic": false,
      "properties": {
        "student_id": {
          "type": "integer"
        }
      }
    }
  }
}
```

```

        "workshop_about": {
            "type": "text"
        },
        "enrolled_year": {
            "type": "date",
            "format": "yyyy"
        }
    }
}
}
}
}

```

D.

```

PUT workshop/_doc/_bulk
{"index":{"_id":1}}
{"student_id":503,"workshop_about":"Video Editing","enrolled_year":"2018"}
{"index":{"_id":2}}
{"student_id":502,"workshop_about":"Python for AI","enrolled_year":"2018"}
{"index":{"_id":3}}
{"student_id":516,"workshop_about":"Android Programming","enrolled_year":"2018"}
{"index":{"_id":4}}
{"student_id":504,"workshop_about":"Elastic Search","enrolled_year":"2018"}
{"index":{"_id":5}}
{"student_id":526,"workshop_about":"Angular JS","enrolled_year":"2018"}

```

E.

```

GET workshop/_search
{
  "query": {
    "terms": {
      "student_id": {
        "index": "college",
        "type": "_doc",
        "id": 1,
        "path": "student.id"
      }
    }
  }
}

```

